

## INSIDE DOPE

Learn to live and laugh—  
Thus delay your epitaph

By **GEORGE  
F. TAUBENECK**

Stories of the Week  
Guaranteed Annual Wage  
Suggestion  
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### Stories of the Week

Neighbors called at the home of Harold Peck in Kansas City.

"It's such a warm evening, we'd like to enjoy your air conditioning," they greeted.

Alas and alack, the Harold Pecks were too tender-hearted to turn on their window air conditioner.

"We don't want to disturb the birds nesting there," Mr. Peck explained.

"My boss does the craziest things. Today he told me to go over to the club and see if he was still there."

"How stupid can they get?" chimed in a second coffee-breaker. "All he had to do was pick up the phone and find out."

"Believe it or not," announced a Dakota senator, "one of our sheep breeders has developed a strain of fast runners. He has clocked lambs at more than 50 miles per hour."

"Why," puzzled a Virginia senator, "do lambs need to run that fast?"

"To keep up with Mary!" triumphed the baiter.

### Guaranteed Annual Wage Suggestion

**Facts:** Combined membership rosters of the CIO and AFL add up to a whale of a lot of consumers. Their economic gains have been so great in recent years that practically all members of those big unions own one or more automobiles, and replace them regularly.

**Quandries:** Now they are driving for a Guaranteed Annual Wage, with the automotive industry as the first target. Chief problem: traditionally people buy automobiles in the spring and summer.

**Solution:** If nearly all CIO-AFL duespayers pledged to buy autos only in the last half of the year, the production curve would be smoothed out appreciably. And GAW would be practicable in the automobile business.

Thus UAW members could have steady employment, automotive manufacturers could increase profits, and the rest of us might even enjoy lower prices. Is this a dumb idea, Walter Reuther?

(Concluded on Page 12, Col. 1)

## What Are We Going To DO About A-C Standards?

Judging by the spontaneously hallelujah response to our editorial on dishonest air conditioning ratings, nearly everybody wants something *done* about an intolerable situation.

Manufacturers, distributors, manufacturers' agents, dealers, and chain-store buyers have ordered close to 30,000 reprints of that editorial thus far. More requests arrive in every mail.

Obviously it hit home. Conscientious men in our industry apparently want everybody else to read and heed it.

But—who is going to "bell the cat?" What next?

Let's quote two letters:

General Electric Co.  
Bloomfield, N. J.

Since your editorial about ratings seems to have created a great deal of comment, this would seem the right time to make a definite move toward standardization. It must be fairly obvious from where you sit that "a tongue in cheek" response has been made in some instances.

May I suggest an attempt be made to formulate a committee, possibly as an American Standards Association operation, to come within the auspices and guidance of ARI. All the agreement and protestation of innocence that appear in letters to the editor may possibly have a reverse effect than that intended, for the reason that I can foresee one of the guilty parties pointing to his letter in the NEWS as proof that not only is his equipment rated honestly, but also that he is supporting the industry in this crusade. And, George, don't fool yourself that it won't be done.

Whether this suggestion for a committee is feasible or not, the time for concrete action is here. It would be a sad commentary

(Concluded on Page 18)

## ASHAE Will Meet In San Francisco June 27 Koch Moves to Its New Factory

**NEW YORK CITY**—Members and guests attending the semi-annual meeting of the American Society of Heating & Air-Conditioning Engineers will hear technical reports on various research projects, as well as a symposium on evaporative cooling conducted by authorities in this field.

They will also have an opportunity to hear addresses by Major General William F. Dean, one of the outstanding heroes of the Korean conflict, and Dr. A. M. Zarem, manager, Southern California Div., Stanford Research Institute.

The meeting will be held June 27, 28, and 29 in San Francisco at the St. Francis hotel, with registration beginning on Sunday and thereafter each morning until the concluding day. Meetings of the Council of the Society and various committees will take place prior to and during this three-day period.

(Concluded on Page 13, Col. 1)

## National Buyer Program Boosts Dealer Sales to Chains, Carrier Reports

**SYRACUSE, N. Y.**—A newly expanded national buyer program set up by Carrier Corp. has been "extremely successful" in boosting dealer sales of air conditioning equipment to the nation's leading chain stores, says John M. Bickel, vice president of Carrier's Unitary Equipment Div.

In operation, the new program provides a local Carrier dealer with face-to-face representation in bidding on an installation in his territory—even though the buying headquarters of a chain may be located in another state or clear across the country.

(Concluded on Page 4, Col. 4)

**KANSAS CITY, Kans.**—Koch Refrigerators, Inc. has completed moving its office and manufacturing facilities from North Kansas City, Mo. to a new location in the Fairfax District of Kansas City, Kans., at 401 Funston Road.

The new quarters, located on a plot over a quarter of a mile long, provides one of the oldest companies in the industry with a modern, new commercial refrigeration plant.

The entire plant is laid out for movement from north to south, with raw materials starting at the extreme north end of the building, and finished products emerging at the extreme south end. The engineering design was such that there

(Concluded on Page 8, Col. 4)

## Coleman Plans Limited Gas Air Conditioner Production In 1956

**NEW ORLEANS**—If this summer's program of field testing goes as well as expected, Coleman Co., Wichita, Kan., expects next year to market limited production of a "practical, economical" gas-powered, motor-driven summer air conditioner for residential use.

That announcement was made by Sheldon Coleman, president and general manager of the company.

In his prepared speech, Coleman said: "If the results of this summer's field tests are as satisfactory as we expect them to be, we will enter into limited production and more extensive field testing in 1956, but production will be measured in hundreds rather than thousands of units."

"To put it another way, we expect to field test a limited number of production models in 1956. Then, if that works satisfactorily, in

(Concluded on Page 21, Col. 2)

## Atomic Powered Air Conditioning Unit Described

**ABSECON, N. J.**—An atomic-powered home heating and cooling system that would operate for about \$50 a year could be a "practical reality possibly within a few years," Robert E. Ferry, general manager of the Institute of Boiler and Radiator Manufacturers, predicted here recently.

Ferry estimated that installation of a conventional boiler and a nuclear reactor about twice the size of an automobile battery would cost about \$1,500. Converting an existing boiler to the atomic-powered system would run about \$1,000, he said.

Source of the power, a hermetically sealed charge of fissionable material in the reactor, would cost about \$300 and last for six years. The charge would be replaceable at

(Concluded on Page 4, Col. 2)

## ASRE Meeting Opens In Milwaukee June 12

**NEW YORK CITY**—The 42nd semiannual meeting of the American Society of Refrigerating Engineers will get under way at the Hotel Schroeder in Milwaukee on Sunday, June 12.

Programmed for the meeting, which will continue through Wednesday, June 15, are three technical sessions, an air conditioning conference, a domestic refrigerator engineering conference, and six forums. In addition, a number of social activities have been arranged.

Set for Wednesday morning, the air conditioning conference will deal with the Air Conditioned Village at Austin, Texas. Speakers will include N. A. Cole, president, Fabicon Co., Austin; C. W. Nessel, Minneapolis-Honeywell Regu-

(Concluded on Page 21, Col. 1)

## Retail Grocers To Meet In Chicago June 12-16

**CHICAGO**—The six major subjects of top interest to the nation's independent food merchants will be highlighted on the 56th annual convention program of the National Association of Retail Grocers at Navy Pier June 12-16.

Profitable meat department management, latest advertising techniques, methods of reducing operating costs, produce department operation for profit, merchandising programs which pay off, and per-

(Concluded on Page 4, Col. 5)

## NLRB Assignment Ruling Favors Contractors

Leveling, Aligning, Setting  
Of Cabinets Need Not Be  
Assigned to UA, Board Says

**WASHINGTON, D. C.**—The work of leveling, aligning, and setting of refrigerated display cases in store construction projects does not have to be assigned to the United Association and the union cannot force or require employers to make such an assignment, the National Labor Relations Board ruled recently.

The NLRB supported charges filed against Pittsburgh Local 449 of the United Association by Refrigeration Equipment Co., Weston Sales & Service Co., and the Great Atlantic & Pacific Tea Co. These firms charged that the union had violated the National Labor Relations Act by inducing employees of the contractor firms to quit work on store projects to force such an assignment.

The Refrigeration and Air Conditioning Contractors Association of Pittsburgh intervened on behalf of the employers, who are members of the association.

In its decision, the NLRB labeled an article in the UA's work contract with the contractors' association, in which the UA claims jurisdiction over all work from curbstone delivery to complete installation, as "a discriminatory scheme for the effectuation of a UA monopoly over the work that

(Concluded on Back Page, Col. 1)

## 4 Refrigerators, 2 Ranges Introduced by Philco

**PHILADELPHIA**—Four new electric refrigerators and two divided top electric range models were announced recently by Philco Corp.

The company also announced that its new line of built-in range ovens and twin surface units are available. Known as Philco Custom-line, the oven, with brushed stainless steel door, is model 156-W and the twin surface unit is model 155-W.

The models were shown to distributors and dealers in previews this month.

The four new refrigerator models include an 11.3-cu. ft. model, 1154-G, with a golden interior that will carry a suggested list price of \$299.95. It has a 1.4-cu. ft.

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## NEXT WEEK

### Servicing Automobile Air Conditioners

A timely new service series covering all leading makes of "independent" firms as well as most automobile manufacturers themselves will start in the next issue.



## Starts to DRY Right Away!

Drying action starts very quickly when you use Thawzone to clear up a moisture condition.

Thawzone actually destroys moisture—it is not a mere antifreeze. The moisture cannot come back. You know the unit will not freeze up again unless more moisture enters the system.

Use in "Freon" or methyl units. Only 1/4 oz. of Thawzone per lb. of refrigerant needed. At all wholesalers or write Highside Chemicals Co., 18 Colfax Ave., Clifton, N. J.



**THAWZONE®**  
THE LIQUID DRIER

ONE MAN can walk an Air Conditioner UPSTAIRS ALONE and put it in the window without help with the new L-S STAIRWALKING "HYKER" write

L-S HTG. & ENGRG. CO.  
910 W. Lycoming St.  
Philadelphia 40, Pa.  
Territories Available

### Taste Panel Tries Frozen Foods from Atomic Test



TIME OUT FOR CODFISH, atomic style. Leo Wilhelm, Bing Crosby Minute Maid, gives bite to Frank Hale, California Retail Grocers Association, as M. L. Combs (left), Snow Crop, and Arnold Zach, Pictsweet, look on. It was part of frozen foods taste panel sampling items exposed to Operation Cue atomic detonation in Nevada under the auspices of National Association of Frozen Food Packers.

### ARI Meeting Will Include Market Study On Air Conditioning by DuPont

HOT SPRINGS, Va.—An added feature for the program at the annual meeting of the Air-Conditioning & Refrigeration Institute, to be held June 6 through 8 at The Homestead here, was announced recently by the the association.

A market study "Consumer Research In the Field of Air Conditioning, a Selling Tool," will be presented by three officials of the Kinetic Chemicals Div. of du Pont: R. J. Thompson, sales director; D.

C. McSorley, advertising manager; and J. C. Hoopes, market research manager.

This presentation will take place at the annual meeting of ARI on Wednesday, June 8. Guest speaker at the annual meeting will be Joseph E. Moody, president of the Southern Coal Producers' Association, a leading expert in the field of labor relations.

Product section meetings will be held Monday and Tuesday, June 6 and 7.

## WHAT... WHEN... WHERE

Air Conditioning & Refrigeration Institute (ARI) Annual Meeting

June 5-8, Hot Springs, Va.

American Society of Refrigerating Engineers (ASRE) Summer Meeting

June 12-15, Schroeder hotel, Milwaukee.

National Association of Retail Grocers, Semi-Annual Meeting

June 12-16, Navy Pier, Chicago.

Mid-Year Home Furnishings Market

June 20-30, American Furniture Mart and Merchandise Mart, Chicago.

American Society of Heating & Air Conditioning Engineers (ASHAE) Regional Meeting

June 27-29, San Francisco.

Exposition of Air Conditioning & Refrigeration Industry

Nov. 28-Dec. 1, Atlantic City, N. J.

### Frozen Food Packers Consider Vertical Display Cabinets

NEW YORK CITY—The task of devising new style frozen food display cabinets—possibly vertical ones—has been assigned to a six-man committee recently established by the National Association of Frozen Food Packers.

The committee also has the job of developing a program to show retailers how to get the most from their present cases, asserted George Mentley, president of the association.

Mentley appointed Hamilton Stone, national sales manager of Minute Maid Corp., to head the committee. He said the committee would work with chain and independent food retailers, cabinet manufacturers, engineers, and others.

### 81% Would Pay \$800 More For Year-Round System

NEW YORK CITY—Year-round air conditioning would be worth paying \$800 more for, prospective home buyers indicated in a House & Home survey.

Asking the question of visitors who inspected the 15 new houses in the Parade of Homes sponsored by the Wichita, Kan. Association of Home Builders last fall, the magazine reported that 81% of 600 replies to its questionnaire said "Yes, it would."

Another question: "What appliances would you want built in?" brought this response: Garbage disposer 92%, dishwashers 63%, range 62%, refrigerator 34%, washer-dryer 11%, television 5%, radio 17%, and freezer 3%.

A third question: "If you plan to build a house in the foreseeable future, what price class is it likely to be in?" resulted in the following breakdown:

\$ 8,000 to \$10,000	5%
\$10,000 to \$12,000	18%
\$12,000 to \$15,000	36%
\$15,000 to \$20,000	28%
Over \$20,000	9%

### Region 7, 8 Wholesalers Will Meet June 9-11

DALLAS—A meeting of Regions 7 and 8 of the Air Conditioning & Refrigeration Wholesalers will be held June 9-11 at the Majestic hotel in Hot Springs, Ark., it was announced here recently.

First day will be devoted to a meeting of the Region 8 Executive Committee, registration, a golf tournament, and a picnic.

Friday morning, June 10, registrants will be welcomed by Fred Wilson and talks will be given by Paul Larimer, sales manager, Ansul Chemical Co.; Arley Baker, sales promotion manager, Alco Valve Co.; and Charles Wirth III, sales manager, Kinetic Chemicals Div., E. I. du Pont de Nemours & Co., Inc.

Larimer will speak on "Motivation of Salesmen," Baker on "Go Forward Brother," and Wirth on "Necessity of Sales Training."

After lunch, there will be individual regional meetings, a dual regional meeting, a talk by E. V. Dunbar on inventory control, and a report of the executive secretary and directors. A cocktail party and dinner will round out the day's activities.

Scheduled for Saturday morning is a joint meeting of wholesalers and manufacturers. Theme of this session will be closer cooperation between manufacturer and wholesaler.

Merle Titus will open this meeting, after which Starr Hull, ARW executive secretary, will talk and then introduce speakers. These include Fred Wilson from Region 8 who will discuss "Sales Assistance"; E. L. Tramposh from Region 7 who will cover "Policy"; and Herman Goldberg, president, Standard Refrigeration Co., who will also speak on "Policy."

A question-and-answer period, moderated by Hull, will follow.

### NEW PRODUCTS?

Turn to "What's New" Page for useful information on new products. Use Key No. for fastest service.

## END WATER PROBLEMS! INCREASE SALES!

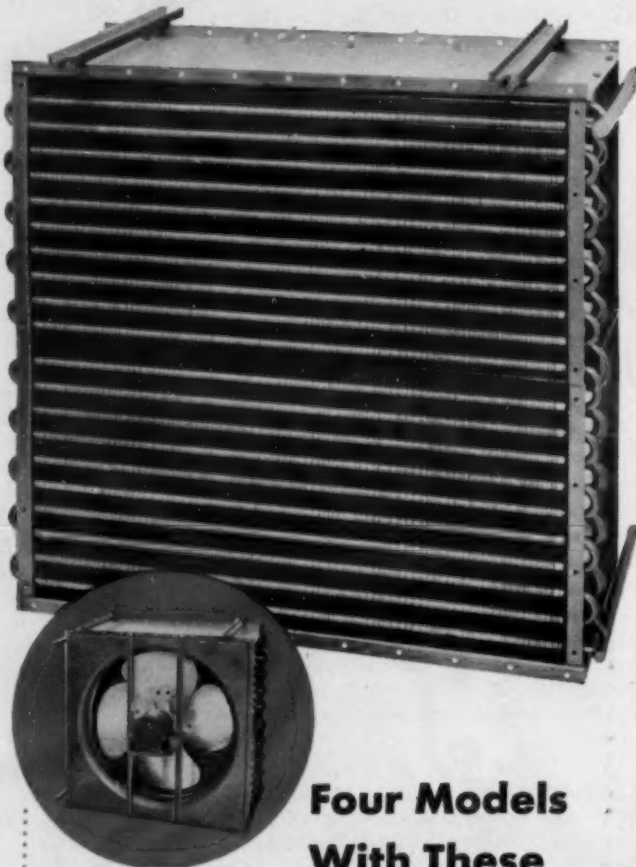
# LARKIN ZEPHYRCON

## air cooled condenser

### Handles Up To 30 Tons Capacity Efficiently

The new Larkin Zephyrcon is your best buy in remote air-cooled condensers. It's priced right and built to give years of efficient service. It ends water problems, enabling you to sell air conditioning and refrigeration systems at a lower initial cost to a new and wider range of prospects—those in areas where water restrictions or conditions have prevented the sales, and those who couldn't afford the higher cost of water-cooled systems.

Your wholesaler has all the facts. Get them from him today, or write us direct.



### Four Models With These Outstanding Features

- 2, 3, 5 and 8-ton units engineered for parallel use when greater capacity is required
- Famous Larkin cross-fin coil—aluminum fins, copper tubes
- Low speed motor operates quietly on resilient adjustable base
- Small-diameter propeller fans and accurately-spaced fins assure quiet operation
- Sides and panels of heavy-gauge steel
- Entire unit finished with corrosion-resistant epoxide, chlorinated-rubber enamel
- Convenient slotted hanger bars may be used at top or bottom for ceiling or floor installation
- Pre-punched holes or flanges for easy connection to duct work
- Optional hood for outdoor installation
- Wall-mounting brackets and floor stands optional for special installations



**LARKIN COILS INC.**

519 MEMORIAL DRIVE, S.E., ATLANTA, GA., — MAin-3171

## ENGINEER, ROOM AIR CONDITIONERS

Manufacturer expanding in air conditioner field has a position of substantial responsibility open to an engineer who can handle all phases of design for a line of room air conditioners. At least five years' experience at a responsible level in air conditioner design is required. Reply giving qualifications and experience to Chief Engineer, Air Conditioning, Amana Refrigeration, Inc., Amana, Iowa.



# New 450-lb. Capacity Ice Cube Maker Multiplies Markets for Frigidaire Dealers



**Compact size, large ice cube or Cubelet capacity, economical operation, pleasing appearance and competitive price offer tremendous sales advantages!**

There's a sales point in size—the cabinet measures only 48½" wide, 29½" deep, 74¾" high. And another sales point in ice production—the new unit produces up to 450 lbs. of cubes or tiny Cubelets per day. And still another sales point in large storage capacity—the bin holds up to 375 lbs. of cubes, to meet peak periods of demand.

The cabinet tucks away in a small space area. Sliding bin door permits

installation in narrow passageways.

Operating economy also sells this unit. It's air cooled to cut water consumption. Two separate refrigerating systems, with two Meter-Miser compressors total only ¾ horsepower for minimum power usage.

The cabinet is attractively styled and every prospect will recognize the extra value offered by this ice cube maker at a very competitive price.



**Exclusive Sliding Door Opens Inner Door Automatically**

This exclusive door design puts Frigidaire Dealers way ahead of competition. It opens flush with cabinet at waist level. Needs little space in front of cabinet for easy access.

## Frigidaire's Packaged Product Expansion Program gives Commercial Dealers even bigger lead in ice cube maker field!

A continuing search to fill real needs in new markets has been the key to success in Frigidaire's packaged product expansion program.

Now Frigidaire has found the answer to better ice service for hospitals, restaurants, hotels, bars and other big-volume ice users with a new 450-lb. capacity Ice Cube Maker.

Frigidaire Commercial Dealers can offer this big market the simplest, most trouble-free, most sanitary ice making system known. Offer the cleanest, clearest ice cubes made—ice cubes so clean they meet even the most rigid of hospital sanitary standards.

And dealers can enjoy the many exclusive sales features offered by Frigidaire's 200-lb. models, including interchangeable grids for cubes and Cubelets that permit stocking fewer models to meet all needs.

Like all other Frigidaire packaged products, the new 450-lb. ice cube maker gives dealers these sales-proved, sales-clinching product advantages—one recognized manufacturer, exclusive

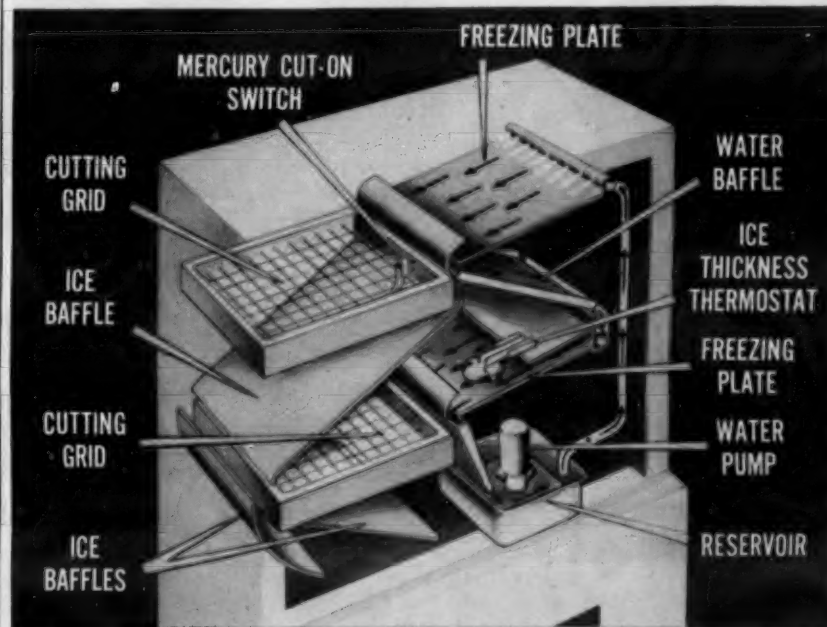
features, quick installation, sound pricing, and trouble-free operation.

Here's another case where Frigidaire's new packaged product expansion program has first opened a market . . . proved a new product with sales . . . and then expanded the product line to bring the entire market within the reach of Frigidaire Commercial Dealers.

**Frigidaire 200 lb. models are leaders in the ice cube maker field**

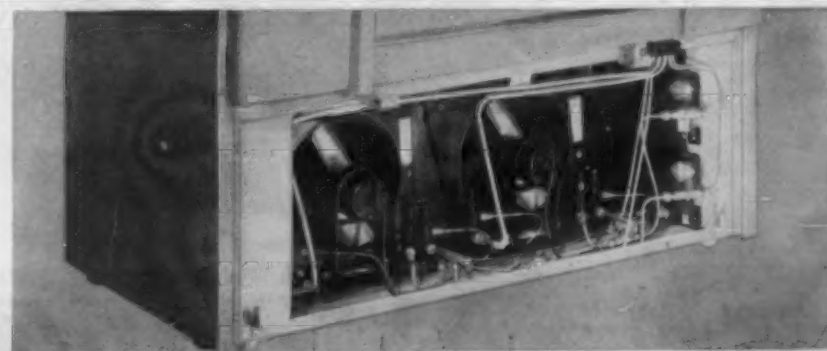


## World's Simplest Ice Making Mechanism Helps to Clinch the Sale



It's easy to sell the quiet, uncomplicated way Frigidaire Ice Cube Makers operate. Slabs of ice, frozen to the desired thickness, are partitioned by heated grids into regular size cubes or tiny Cubelets. No chains, levers, knives or grinders to

break down or require maintenance. No noisy operation to disturb patrons. Operation stops automatically when cubes fill sanitary porcelain bin—operation starts again automatically whenever cube level is reduced.



It's easy to sell the simplicity and economy of Frigidaire's twin Meter-Miser refrigerating systems. Only two moving parts operate in each Meter-

Miser compressor. And units are designed to squeeze all the cooling from electricity. Quality construction assures long, dependable service.



# FRIGIDAIRE

COMMERCIAL REFRIGERATION AND AIR CONDITIONING

—for growth and progress with General Motors



## Architects To Create Home with Emphasis On Kitchen Design

DAYTON—Some of the nation's leading architects are focusing their attention on the kitchen, with Frigidaire Div. of General Motors commissioning a number of top architects to create exciting new homes, emphasizing kitchen design and recognizing the kitchen as center of the home.

"In too many plans today the kitchen equipment has been crowded into whatever space was left over on the first floor, with little actual regard for utility convenience and beauty," says Mason Roberts, vice president of General Motors and head of Frigidaire.

"Furthermore, much kitchen design work has been done without regard for the relationship of the kitchen to the rest of the house. In effect, we have challenged these talented architects to concentrate on the best possible kitchen design and arrangement, building the house around the kitchen."

Architect Robert A. Little, of Cleveland, has created the first house design in the kitchen series. It will be made public soon, followed by designs by such well known architects as Carl Koch, Harwell Harris, A. Quincy Jones-Frederick E. Emmons, and Rufus Nims.

House plans, together with detailed drawings and specifications

for these kitchens, will be made available to architects and builders as announced.

"During the next few years there will be more improvements in the kitchen than in any other room in the house, greater changes than have taken place in the kitchen in decades," Roberts predicts.

## Atomic Air Conditioning--

(Concluded from Page 1, Col. 4) the same price, he indicated.

For summer cooling, a small absorption refrigeration unit could be added. Water chilled by the unit would be piped to forced convectors or dual baseboards.

During winter, the same sealed piping system would carry hot water for heating. The atomic-powered boiler would also provide hot water for household uses and for snow melting, he anticipated.

Ferry estimated that if manufacturers would start research on the system now, it could be in production by 1958. Biggest foreseeable obstacle would be in adequate supplies of fissionable material.

Ferry foresaw no danger in the system. The elements necessary for chain reaction would not be present, he said, and multiple shielding of the reactor would make it safe from radioactivity.

He indicated that new home builders could save several hundred dollars in the cost of an atomic heating and cooling system through the elimination of flues and chimneys.

## New Philco Models--

(Concluded from Page 1, Col. 5) freezer that will hold 46 lbs. of frozen foods. It has a separate fast freezing shelf for ice cubes.

The "Dairy Bar" is double-depth and the entire inner door is usable for food storage and will hold four 2-qt. milk containers. It also has two portable egg racks and three bottle shelves.

Model K-1057 is a Philco twin-system automatic refrigerator with air conditioning in the main food compartment to keep foods fresher. It will carry a suggested list price of \$329.95.

It holds zero degrees in the separate freezer, which holds 63 lbs. of frozen foods, and 38 to 42° in the main food compartment and automatically defrosts.

The Dairy Bar includes a "Butter Keeper," two removable egg racks, and three bottle shelves. All shelves are removable. This model features Key Largo interior color styling.

Model 1053 is a 9.7-cu. ft. refrigerator with a freezer that will hold up to 48 lbs. of frozen food. It has a refrigerated shelf for fast freezing of ice cubes. The door shelves include a Butter Keeper, an egg rack, and three bottle shelves. It will carry a suggested list price of \$279.95.

Model K-853 is an 8.2-cu. ft. refrigerator with a freezer capacity of 35 lbs. of food. It is equipped with two ice trays, full-width chiller drawer, food compartment



PHILCO twin-system automatic refrigerator.

light, two full-width shelves, and one adjustable, full-width crisper. The door storage includes a Butter Keeper and two bottle shelves. It will retail at a suggested list price of \$199.95.

All models are now nationally available.

The divided top ranges, reported Raymond A. Rich, vice president-appliance division, are planned for families who need maximum cooking capacity on their range. With the divided top, he pointed out, large kettles and pots, such as those used for canning, or extra-large frying pans can be used without crowding.

Range model 451-D, which carries a suggested list price of \$199.95, is a 40-in. range with the extra-wide 23-in. oven. It has three surface units, a deep well cooker, and a vertical storage compartment. It has a bright metal control panel styling with controls at the top of the panel.

Range model 454-D has four surface units, two 8-in. and two 6-in. It carries a suggested list price of \$269.95. It is a 40-in. wide deluxe range with a 23-in. wide oven. The model is equipped with Philco's new "Quickset" timer which requires only two settings, cooking time and finish time.

Philco's "Customline" built-in oven is designed to fit the standard 24-in. cabinet and will come equipped with the new Quickset timer.

Suggested list prices are Customline oven model 156-W, \$179.95; Customline twin-surface units (pair), \$69.95.

## Carrier Program--

(Concluded from Page 1, Col. 2)

To effect this service for dealers, Carrier has now placed national buyer representatives in each of its 26 district and branch sales offices throughout the United States, Bickel explained.

According to the Carrier executive, the new program has a three-fold purpose:

1. It provides cost-free sales operations and direct mail service for dealers. This elimination of sales expense is of direct benefit to the dealer.

2. It is designed to consolidate negotiations for individual installations throughout the country, reducing the amount of red tape for a national buyer.

3. It enables a chain to order air conditioning equipment for multiple installations in any part of the United States and be assured of standardized performance, proper engineering, competitive pricing, and continuing service.

Bickel said Carrier's new program also serves the dealer as a clearing house for information on possible chain store expansion in his territory.

"Frequently, a dealer is not aware of an important national buyer contemplating locating in his community. Secrecy may be necessary for competitive reasons, or until real estate negotiations are completed.

"When a dealer does become aware of it, the individual with whom he is expecting to deal is often a thousand miles away. Negotiations must be carried on by telephone or by mail—an un-

## NARGUS Program--

(Concluded from Page 1, Col. 4) sonnel selection and training are the topics NARGUS members have asked to be presented by a "staff of experts" at the 1955 convention.

### MEAT DEPT. PANEL

Scheduled for Monday morning, June 13, the meat department management panel presentation will be moderated by C. G. Bowes, director of NARGUS Meats Div. The retailer panel will consist of Elmer Johnson, Hopkins, Minn.; George P. Connolly, Kenosha, Wis.; and Hans Nelson, Seattle.

Ned Fleming, president of the National American Wholesale Grocers Association and owner and operator of The Fleming Co., Topeka, Kan., will moderate the Thursday morning session on "Building Volume and Profit."

This presentation will feature four of the country's leading retailers who, in cooperation with their suppliers, have shown astonishing growth in a limited period of time, it was pointed out. They are Earl Madsen, Mankato, Minn.; Jerry Fahringer, Phoenixville, Pa.; John Assalone, Hoxsie, R. I.; and Frank I. Hale, Los Angeles.

### INNOVATIONS PLANNED

Among the innovations planned by NARGUS for the 1955 convention are the scheduling of all week-day business sessions in the morning and exhibits in the afternoon.

Official opening of the exhibit of food and grocery products and equipment in the North Hall of Navy Pier is set for 10 a.m. Sunday. On Monday, Tuesday, and Wednesday, the Exhibit Hall will open at noon.

The convention itself will officially get under way at 1:30 p.m. Sunday.

Each week-day morning, after a light breakfast is served at 7:30 o'clock at Navy Pier in the restaurant area, there will be an "Early Birds' Idea Exchange" from 8:30 to 9:30 a.m. in which selected retailers will quickly review some unusual activity which has been making money or increasing profits for them.

Shuttle bus service between the major hotels and Navy Pier and to social affairs will be available.

satisfactory method for both parties," Bickel said.

In such a situation Carrier's national buyer department acts as the dealer's personal agent. Their engineering and architectural data familiarize the prospect with what Carrier has to offer in the way of equipment through their distributor or dealer.

## Frigidaire Ups Rex W. Smith

DAYTON—Appointment of Rex W. Smith as director of press and radio relations for Frigidaire Div. of General Motors Corp. has been announced by C. Carlton Brechler, director of public relations.

Formerly supervisor of appliance publicity, Smith has been with Frigidaire for nine years. Before joining GM he was on the editorial staff of the South Bend Tribune.

W. Worth Ware, formerly supervisor of air conditioning publicity, has been appointed supervisor of all product publicity. Ware came with Frigidaire in 1947.

## Polk Bros. To Give Cokes To Spur Sales

CHICAGO—"The pause that refreshes" may also be the pause that helps close a sale at Polk Bros. this summer.

"The home of king-size trade-ins," as Polk calls itself, is going to give king-size Coca-Colas—100,000 cases in all—to prospects. Contract for delivery of the cokes was signed recently by Polk and Coca-Cola Co. officials.

## THIS COMPLETE LINE MEETS EVERY NEED FOR PUSHBUTTONS

**DESIGN LEADERSHIP**

**STANDARD DUTY**

- General Purpose
- General Purpose with Pilot Light
- General Purpose with Lockout
- Explosion-resisting
- Oil-immersed
- Water-tight and Dust-tight
- Flush Mounting

**HEAVY DUTY**

- General Purpose available up to 8 units
- Flush mounting with Pull Box
- Palm-operated Button
- Selector Switch

**OIL-TIGHT HEAVY DUTY**

- One Unit Station
- Two Unit Station
- Three Unit Station
- Four Unit Station arranged for horizontal mounting
- Nine Unit Station

Available in 1 to 16 unit sizes, 6-9-12-16 unit stations have hinged covers for easier wiring

**Write for Pushbutton Bulletins which give complete details. Address Square D Company, 4041 N. Richards Street, Milwaukee 12, Wisconsin.**

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

**SQUARE D COMPANY**





## *Fabulous* is the word for "Foodarama"

**In appearance**—in performance—in consumer appeal—and in bright opportunity for the retailer, here is a product that can be described only in superlatives.

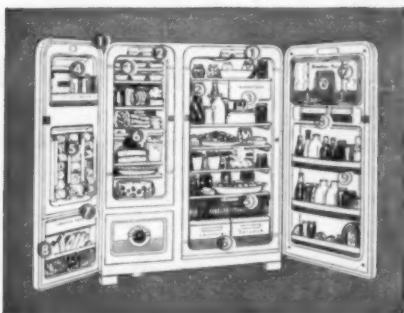
Its public acceptance has been an amazing example of how a truly great product can bridge social and economic levels. For Foodarama knows no class distinctions. The first dozen purchasers represented almost a cross-section of American life: they included a doctor, a drill press operator, a chauffeur, a lawyer, a railroad engineer, a grocery store owner, a banker, a farmer.

And the reason for Foodarama's unusual appeal is plain: with its five cubic foot freezer, eleven cubic foot moist-cold refrigerator, and its great array of

convenience and utility features, it fulfills ideally the modern-day need for safe-storage of perishables, fresh and frozen, in the American home.

Everywhere the Foodarama is shown, men and women stand before it, admiring, wishing, and resolving that here, definitely, is something they must have. And, again and again, the wish is father to the deed—with substantial rewards for the Kelvinator dealer and his salesmen.

Foodarama, once again, makes it possible for the dealer to measure, in terms of cash value, the reason why his Kelvinator franchise is the most attractive in the appliance industry.



### FREEZER

- ① A True Home Freezer. Separately insulated Freezer stores 166 pounds.
- ② Separate Temperature Control Dial.
- ③ 6 Ice Cube Trays. Each tray holds 18 cubes.
- ④ Ice Cream Keeper. Stores more than a gallon of ice cream.
- ⑤ Juice Rack. Frozen juices and fruits.
- ⑥ Freezer Shelves. Four shelves are refrigerated. Two shelves are removable.
- ⑦ Freezer Wrap Dispenser. 12-inch roll of freezer wrap in the door.
- ⑧ Unrefrigerated Banana Bin stores bananas safely.

### REFRIGERATOR

- ① Temperature Control Dial. Regulates temperature and moisture in the refrigerator.
- ② Humidiplate. Keeps foods dewy-fresh without covering.
- ③ Slide-out Handitray. Fresh meats keep safely for daily use.
- ④ 3 Roll-Out Shelves. Roll to you at a touch . . . even when fully loaded.
- ⑤ Slide-Out Fruit Basket. Stores generous supply of fresh fruit.
- ⑥ Twin-Moisture-Seal Crispers . . . of white porcelainized steel.
- ⑦ Breakfast Bar. Stores bacon, eggs, juices—everything for breakfast.
- ⑧ Butter and Cheese Chests.
- ⑨ Extra Deep Door Shelves.

5 cu. ft. (166-lbs. capacity) Upright Freezer, and 11 cu. ft. "Moist-Cold" Refrigerator, both in a cabinet only 47" wide.

# Kelvinator

DIVISION OF AMERICAN MOTORS



MEANS MORE FOR AMERICANS

THE MOST VALUABLE  
FRANCHISE IN  
THE INDUSTRY!

AVAILABLE IN 8 NEW DECORATOR  
EXTERIOR COLORS AND WHITE.





## Amerotron To Build Air Conditioned Woolen Plant In Barnwell, S.C.

BARNWELL, S. C.—Amerotron Corp. of Textron American, Inc., has completed plans for the building of a huge, air conditioned woolen plant here.

R. L. Huffines, Jr., president, said the new project, calling for 400,000 sq. ft. of the most modern type of industrial plant, will be "the outstanding woolen unit in the world." The windowless plant will be fully air conditioned.

The plant will be completely integrated with spinning, weaving, dyeing, and finishing all housed under one roof. Lockwood Greene Engineers, Inc. is the designer.

## Appliance Service Co. To Handle All Service, Parts for Coolerator

DULUTH, Minn. — Appliance Service Co. of Albion, Mich. has been designated as the future source for parts and service on all Coolerator products produced from 1946 to 1954, John Unger, national service manager for Coolerator, announced here recently.

Appliance Service Co. is located at 804 N. Clark St., Albion. All defective parts either in or out of warranty should be sent to this address, Unger said.

## N.Y. Employers Must Pay Salesmen Once a Month

ALBANY, N. Y.—Gov. Averell Harriman recently signed a labor-law amendment which requires employers in the state to pay their salesmen at least once a month, starting July 1.

Sponsored by the National Council of Salesmen's Organizations, Inc., the legislation covers wages and "all other remuneration due each salesman."

## Wolverine Names Dr. Kern Heat Transfer Consultant

DETROIT—Wolverine Tube, Div. of Calumet & Hecla, Inc., announces the appointment of Dr. Donald Q. Kern as professional consultant in the field of heat transfer.

Dr. Kern has served for many years as design engineer for several of the country's leading manufacturers of heat transfer equipment, including Foster Wheeler Corp. and Patterson Foundry & Machine Co., it was pointed out.

Rated by industry, government, and colleges as an authority on heat transfer, thermodynamics, and thermal processes and equipment design, Dr. Kern is the author of an 870-page book, "Process Heat Transfer," which has

been accepted by industry throughout the world and serves as a graduate text in most engineering colleges, the company further stated.

In addition to his industrial activity, he is currently professorial lecturer at Case Institute of Technology, Cleveland, and previously served as professor of chemical engineering, Graduate School, Polytechnic Institute of Brooklyn.

In his new association with Wolverine Tube, Dr. Kern will work closely with Wolverine's sales and field engineering representatives concentrating primarily on copper, copper base alloy, and electric welded steel condenser tube applications and the design and process applications of Wolverine "Trufin," the integral finned tube.

## Announce Appointment of Four York Distributors

CHICAGO—Appointment of four new York distributors has been announced by John L. Roth, central district manager, Commercial Div., York Corp.

They are Frost Air Co. and Schilling Chilling Co., Inc., Indianapolis; Shepherd Fuel Co., Inc., Kalamazoo, Mich.; and Warren's Heating & Sheet Metal, Elgin, Ill. Frost Air will handle refrigeration and ice equipment, and the other three firms will handle air conditioning products.

## Worthington Names Henri Soumerai

HARRISON, N. J.—Henri Soumerai has been appointed assistant chief engineer of the Refrigeration Compressor Dept. at the Holyoke Works of Worthington Corp., according to S. R. Hirsch, executive engineer.



H. Soumerai

Soumerai will continue in the responsibility for design and development of hermetically-sealed compressors, low temperature refrigeration systems, and water-cooled refrigeration condensers.

A native of Switzerland and graduate of the College of Geneva, Soumerai holds a master of science degree in mechanical engineering from the Swiss Federal Institute of Technology in Zurich.

## March Wholesaler Sales Up 48% over February

WASHINGTON, D. C.—Sales of air conditioning and commercial refrigeration equipment distributors in March were up 48% from February and gained 25% compared with the same month of last year, according to the Bureau of the Census.

For the first quarter of 1955, their sales were 10% higher than during the like year-ago period. The distributors' end-of-March inventories increased 9% compared with stocks on hand Feb. 28 but were down 3% compared with the March 31, 1954 level.

March sales of distributors of electrical appliances, TV and radio sets and parts, and electronic parts and equipment advanced 9% from the February level and 7% from March, 1954. First-quarter sales rose 8% above the year-ago period. End-of-March inventories were up 7% from the end of February but down 4% compared with stocks on hand March 31, 1954.

## Region 8, 9 Wholesalers' Golf Tourney on June 9

DALLAS—Air conditioning and refrigeration wholesalers of regions 8 and 9 will hold a golf tournament at Hot Springs, Ark. on June 9, W. R. Barbeck of Barbeck Refrigeration Supply Co. here announced recently.

The tournament will start at noon. Entry and green fee is \$5.

## Texas Style

## Dynamite Replaces Shovel In Ground-Breaking for New G-E Plant In Tyler

TYLER, Texas—In typical Texas fashion of doing things in a big way, the traditional shovel was thrown away recently at ground-breaking ceremonies here, and dynamite triggered by a giant thermostat attached to a G-E cooling unit was used to blast the excavation for a new multi-million dollar home cooling plant.

The first major G-E facility to be built in Texas, the new plant will be completed by the fall of 1956 and will house the headquarters of the G-E home heating and cooling department.

According to Roy W. Johnson, executive vice president of the G-E appliance and electronics group, "this move to Tyler by General Electric Co. is typical of our company's confidence in the tremendous opportunities that lie ahead for all business and all America. We are convinced that all signs point to unparalleled growth of the American economy in these next 10 years."

Johnson was principal speaker at the ceremonies attended by Texas industrial and Tyler community officials.

## AEC Eases Restriction On Non-Military Data

WASHINGTON, D. C.—Under new rules issued recently by the Atomic Energy Commission, it won't be so tough to get a look at the agency's non-military data.

Previously, organizations or individuals who wanted to study AEC information were required to enter into a complicated agreement with the agency. Now, the agency will issue what one official described as "library cards" for its data to all who qualify.

Proper clearance is still required—an "L" clearance to inspect data classified as confidential, and a "Q" clearance for secret material.

Also, the applicant will have to show that confidential atomic information will have a "potential use or application" in his business, profession, or trade. If the applicant wants to study secret documents, he must demonstrate it will have an immediate and significant effect on his business, profession, or trade.

Further, all applicants must agree to observe all AEC security regulations and the patent provisions of the Atomic Energy Act.



## SOLENOID VALVES..

so quiet

so dependable

so maintenance-free

THAT THEY'RE SPECIFIED AGAIN AND AGAIN FOR HOTEL ROOM AIR CONDITIONING CONTROL

Hotel guests are the most particular people in the world. Control of individual room air conditioning in these Affiliated National Hotels depends upon Jackes-Evans Solenoid Valves. Proven thoroughly satisfactory in past installations, J-E Valves have again been specified for three National Hotels now being air conditioned.\*

These outstanding J-E advantages can solve your control problems, too:

- **Quiet operation**—because of the resilient synthetic rubber diaphragm... no impact action or mechanical linkage to cause noise.
- **Dependable performance**—they seat tightly with absolutely no bubble tolerance. Amazingly simple design has only two moving parts—no metal-to-metal contacts to wear with use.
- **Maintenance-free**—unusually rugged construction—flexible diaphragm eliminates clogging due to rust, dirt or scale—minimum temperature rise assures cool coils, long life.

Whatever your requirements, for a completely satisfactory job specify and use J-E Solenoid Valves. For complete information, call your wholesaler or write direct today.

Hotel Washington	District of Columbia
Hotel Claypool	Indianapolis, Indiana
Hotel Stephen F. Austin	Austin, Texas
Hotel Cortez	El Paso, Texas
Hotel Buccaneer	Galveston, Texas
Hotel Galvez	Galveston, Texas
Hotel Jean Lafitte	Galveston, Texas
Hotel Lubbock	Lubbock, Texas
Hotel Falls	Marlin, Texas
Hotel Cactus	San Angelo, Texas
Hotel Menger	San Antonio, Texas
*Hotel Monticello	Norfolk, Virginia
*Hotel Thomas Jefferson	Birmingham, Alabama
*Hotel Paxton	Omaha, Nebraska



for lasting customer satisfaction

**SOLENOID VALVES**

that surpass their specifications

**JACKES-EVANS MANUFACTURING COMPANY**

Controls Division • 4427 Geraldine Avenue, Saint Louis 15, Missouri



## NOW... LOW COST EXTRA REFRIGERATION WITH THE NEW KOOL 'KLOSET

Again, La Crosse engineering sweeps the field with this low cost answer to the demand for extra refrigeration space. The KOOL 'KLOSET walk-in, reach-in cabinet is ideal for all 'round storage of countless items... at a low, low price.

## KOOL 'KLOSET FEATURES...

the new La Crosse self-contained refrigeration system, grey baked enamel exterior, 3" spun glass insulation, rugged hardware with inside release, sizes 34" wide and 62" wide.



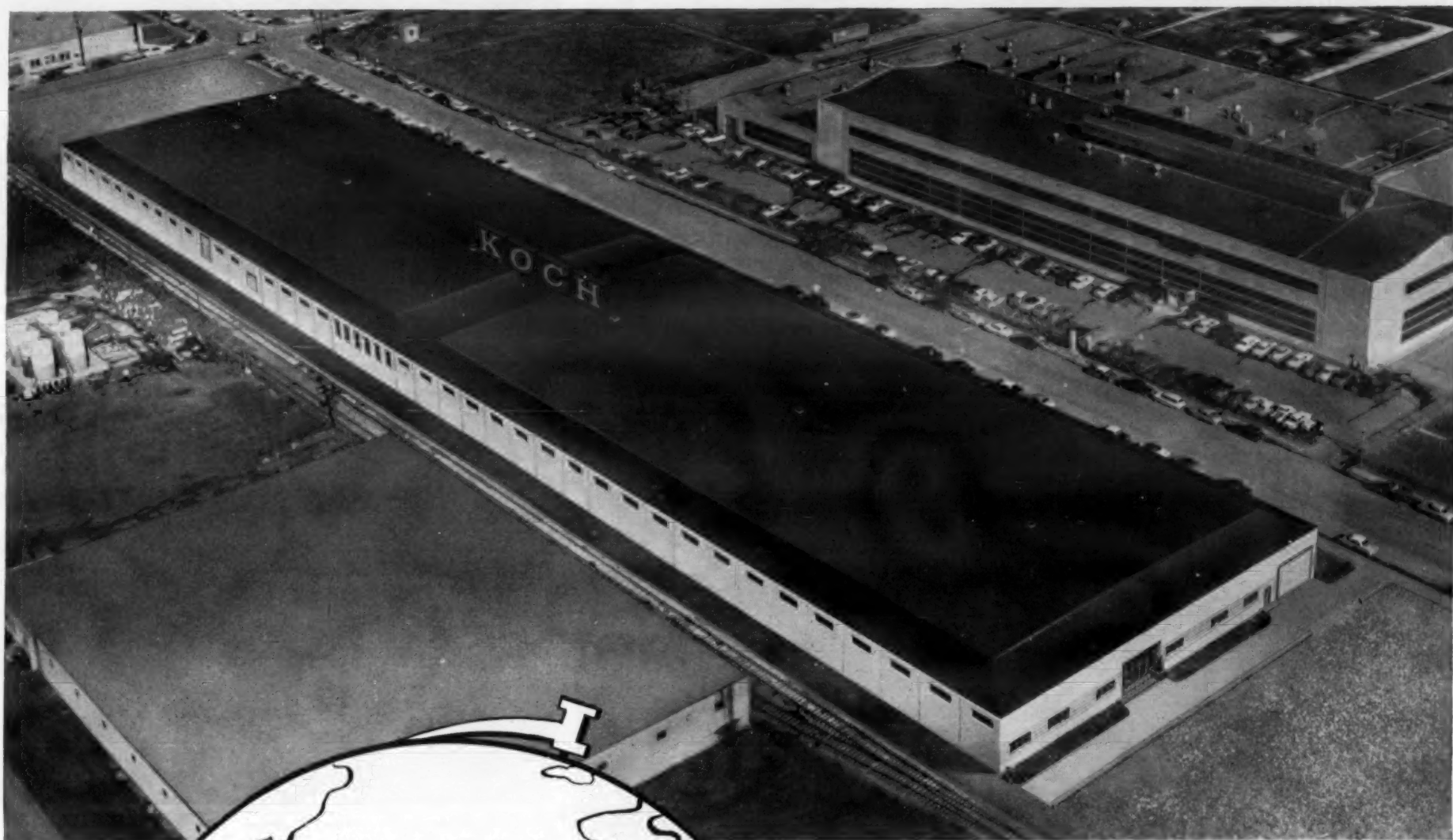
WRITE TODAY for complete information

**LA CROSSE COOLER COMPANY**

Factory and Gen'l Offices: 3000 Losey Blvd., So., La Crosse, Wis.  
Export Office: 80 Broad St., New York City. Cable Address: Eximport.



# NEW WORLD HEADQUARTERS FOR KOCH REFRIGERATORS



## \* *The New Koch Fairfax Plant in Kansas City, Kansas*

Your loyalty and confidence in KOCH products created this, the world's newest, most modern commercial refrigeration factory. Established in 1883...rededicated in 1955...KOCH offers its 72 years of continuous progress in the refrigeration industry as striking testimony that people all over the world recognize and demand high quality, competent engineering, and superior workmanship.

- *Commerical Refrigerators*
- *Refrigerated Market Fixtures*
- *Air Conditioning*

# KOCH

SINCE 1883

refrigerators, inc.

401 FUNSTON ROAD • KANSAS CITY 15, KANSAS



## Kelvinator Has 'Hot 'n Cold' Water Cooler

DETROIT — Kelvinator has offered an assist to employers for that growing American habit—the coffee break, with a "Hot 'n Cold" water cooler that can be installed in the work area.

The new Kelvinator Hot 'n Cold water cooler comes in two models, bottle and pressure type. Equipped with newly designed 500-watt automatic heaters, both have a hot water capacity of 5 qts. which serves approximately 25 cups of coffee or other hot beverages from a full tank. The recovery rate is 40-60 cups an hour.



The pressure or bubbler-type cooler has a cold water capacity of 10 gals. an hour and 5-qt. storage. Cold water capacity of the bottle type is 2 gals. an hour, with 3-qt. reserve storage. The latter requires no plumbing.

The pressure model, PE-10-HC, will cool water at the rate of 10 gals. an hour, with 5-qt. storage. It will provide properly cooled

drinking water for about 120 persons.

Model BE-2-HC, the bottle type, has a cold water capacity of 2 gals. an hour, with 3-qt. storage. Up to 60 persons an hour can be served.

Water temperature, both hot and cold, is maintained by an adjustable thermostat operated by switches located behind the removable front and rear panels.

## 5th ASRE Data Book Has 3 New Chapters

NEW YORK CITY—Three entirely new chapters—on pre-cooling, fishing boats, and passenger automobiles—are included in a new edition of the Air Conditioning-Refrigerating Data Book, Applications Volume, published by the American Society of Refrigerating Engineers.

This is a 5th edition, written by 89 experts, with Harold M. Hendrickson, associate professor, Dept. of Mechanical Engineering, University of Washington, as editor-in-chief.

The new 984-page edition contains 61 chapters. Chapters on fisheries products, breweries, refrigerated warehouse design, ship's stores, and cold treatment of metals have been entirely rewritten.

"Authors and associate editors were chosen because of their experience and eminence in their particular fields," the society pointed out.

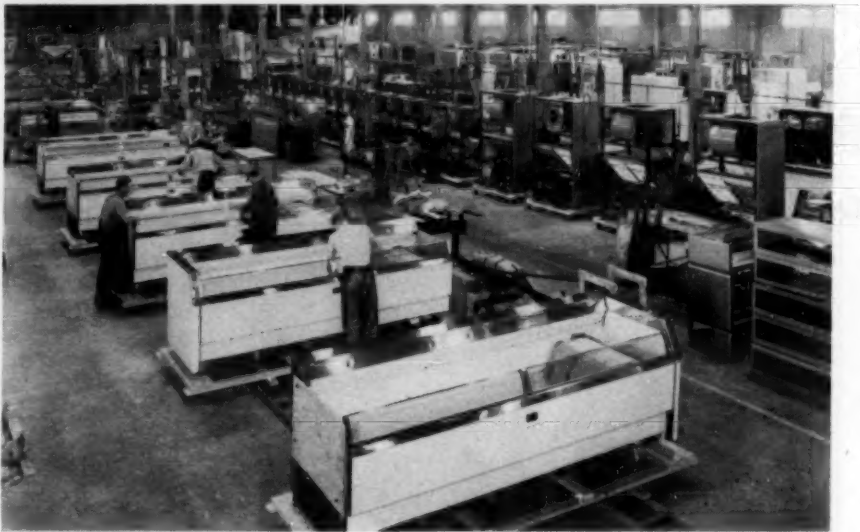
The volume includes design information, formulae, tables, diagrams, and sample engineering calculations in factual handbook style presentation. There are 343 illustrations and 104 tables. The classified section lists manufacturers of components and assembled units of air conditioning and refrigerating equipment.

Price of the volume is \$7.50.

## Commercial Refrigeration



SHEET METAL FABRICATING department—Sheet metal parts for fabrication of Koch display cases, reach-in refrigerators, and air conditioners are sheared, notched, punched, and formed in the area above. The sheet metal plant is in the north end of the building near the entrance and is at the beginning of the manufacturing flow. The building is large enough to house approximately three football fields.



ASSEMBLY AREA—In the foreground, and to the left of the picture, is a market equipment assembly area. On the line are models of the Koch Series 1500 low temperature display cases. To the right is a line of packaged air conditioners, and two reach-in refrigerator lines are shown at the top of the picture, to the right. This assembly area is part of the south half of the building. The fire wall, shown at the top of the picture, runs east and west across the building and divides it in half.

## New Koch Refrigeration Plant--

(Concluded from Page 1)

is no back-tracking to interrupt the continuous flow from raw material to finished product.

Koch engineers worked for months at scheduling the move in such a way that "down" time would be reduced to a minimum. Departments were moved in accordance with their sequence in the manufacturing cycle so that as production built up in the new building it was, at the same time, tapering off in the old. Production continued throughout the entire move without interruption, and no department was completely shut down for more than five production days.

Most of the move was accomplished during the first quarter of

1955. Yet, despite this major operation, Koch shipments for the period were well over 20% above the first quarter of 1954, reports Millard Mayer, chairman of the Board.

Koch manufactures a complete line of refrigerated display cases for food stores, a line of reach-in refrigerators for restaurants, stores, and institutions, and also produces a line of packaged commercial air conditioners.

Distribution of Koch products is world wide, with approximately 15 to 20% of the total output going overseas. In the United States, sales are handled through dealers in all of the 48 states and the District of Columbia.

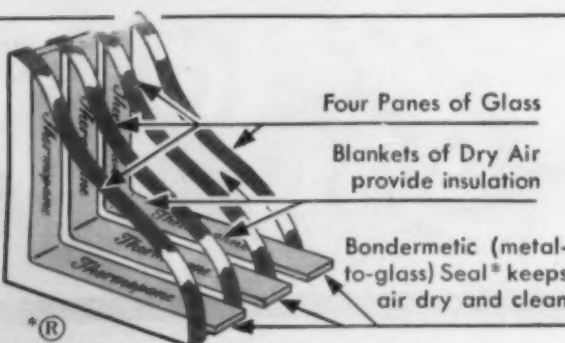
## Look at Frozen Food DISPLAY from the "IMPULSE" Angle!

**YOU NEED GLASS** in your refrigerated cases because display triggers the impulse sales. That's why modern refrigerated cases display your merchandise through *Thermopane*—"display windows."

*Thermopane* combines visibility for more display with insulation for operating economy. Only *Thermopane* has the famous *Bondermetic Seal*\* which prevents condensation between the panes of glass and keeps out dirt. There is no organic material to deteriorate.

Next time you look at refrigerated cases, see how much more display you get with *Thermopane*. Look for the name imprinted on the seal between

the panes. *Thermopane* is used by all leading refrigerated case manufacturers. Libbey-Owens-Ford Glass Co., 608 Madison Ave., Toledo 3, Ohio.



**Thermopane**  
INSULATING GLASS

**LIBBEY-OWENS-FORD**  
a Great Name in Glass

## BOOST YOUR PROFITS SKY HIGH

... BY SELLING THE FAMOUS CARBONATORS THAT REDUCE BEVERAGE COSTS TO ROCK BOTTOM

A Model for every need... Preferred by leading users, from neighborhood Taverns to luxurious Cocktail Lounges, from Drugstores to Major League Ballparks.

- Highest carbonation.
- Most foolproof.
- Midget size with giant capacity

Jet Foamscent Carbonators by Carbonic Dispenser U. S. Patent No. 2,588,677.



### MAIL THIS COUPON TODAY

For literature outlining the opportunity now open to make bigger profits selling Carbonic Dispenser Equipment.

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_



General Offices: Canfield, Ohio  
Branch Offices:  
1851 Randolph St., Los Angeles, Calif.  
IN CANADA: GENERAL EQUIPMENT CORP., LTD., TORONTO, ONT.



# Text of Standards for Advertising and Selling Room Conditioners Adopted by ARI and NBBB

WASHINGTON, D. C.—A suggested 16-point program of standards for advertising and selling room air conditioners was announced recently by the Air-Conditioning and Refrigeration Institute and the National Better Business Bureau.

The standards are intended to encourage and preserve dependability in advertising and selling room air conditioners, according to ARI Managing Director George S. Jones, Jr. and NBBB executive Vice President Allan E. Backman.

A major objective is the elimination of public confusion about the cooling capacity of room air conditioners by expressing it in terms of B.t.u./hr. as determined by an ARI determined standard. (See point 4).

Text of the standards follows:

## PURPOSE

The intent of these standards is to encourage and preserve dependability in advertising and selling room air conditioners. They apply equally to advertisements in newspapers, magazines, radio broadcasting, telecasting, direct mail, window displays, counter cards, and advertising promotion in any form used, or prepared for use of others, by national advertisers and national or regional distributors of room air conditioners.

It is also hoped that these standards will have a stabilizing influence on the advertising and selling practices at the local level, where they may be supplemented to meet local requirements. These standards should help build customer confidence in the room air conditioner industry, thereby helping to protect the investment of dealers, distributors, and manufacturers in the productivity of room air conditioner advertising:

## 1. ACCURACY

All advertising statements for a room air conditioner shall be accurate, free of the capacity to mislead or deceive the consumer and shall reveal material facts, the deceptive concealment of which might cause customers to be misled.

## 2. DEFINITION

A room air conditioner is a factory-made, encased assembly designed primarily as a unit for mounting in a window or through a wall, or as a console, for free delivery of conditioned air to an enclosure and without ducts for conditioned air supply or return.

## WHY WAIT?

Get your new product info pronto. Use coupon on "What's New" page this issue. Use Key No. for fastest service.

## SUPER-FLO FILTER-DRIER



UP TO 5 TONS  
NO PRESSURE DROP  
MOLDED REMCAL DRYING  
FIBERGLAS DEPTH FILTERING  
Check Super-Flo's amazing low price, for both original equipment and replacement, against ordinary driers which do not have Super-Flo molded drying elements, massive fiberglass depth filters and spun-end copper shells. Available to the trade through wholesalers everywhere.

**REMCO** INCORPORATED  
ZELIENOPLE, PA.

It includes a prime source of refrigeration and dehumidification and means for circulating and cleaning air, and may also include means for ventilating, heating, or performing other functions.

## 3. FANS, COOLERS, ETC.

Air coolers, air purifiers, air humidifiers and dehumidifiers, and air circulators, such as fans and blowers, as well as any other device not performing the four minimum functions of an air conditioner, shall be described for what they are and shall not be described as air conditioners.

## 4. COOLING CAPACITY

(a) Statements of cooling capacity when expressed in terms of B.t.u./hr. capacity of the unit shall be according to its rating based on the ARI Standard 110-55, Section 4.

(b) Any statement of cooling capacity as applied to 1956 models, or later, shall be expressed in terms of the B.t.u./hr. capacity of the unit according to its rating based on the ARI Standard 110-55, Section 4.

## 5. AREA COOLING CLAIMS

Recognizing the wide variation in construction, insulation, temperature, and other controlling factors, advertising claims as to area cooling capacity shall be appropriately qualified to avoid deception of the public.

## 6. AVAILABILITY

A room air conditioner shall not be advertised for sale unqualifiedly unless sufficient stock is on hand, or readily available, to meet reasonable demand and be available for purchase and delivery. If orders are being solicited for future delivery, that fact shall be disclosed. If the quantity of an article is limited, the number available shall be stated.

## 7. ILLUSTRATIONS

(a) Illustrations of advertised merchandise shall conform without exaggeration or essential difference to the appearance of the merchandise actually on sale.

(b) Illustrations or layouts of any nature which show an air conditioning unit in false or misleading relation to a featured price, shall not be used. If an air conditioning unit illustrated is not the model to which the copy or a featured price applies, the selling price of the illustrated model shall be listed in prominent and legible figures directly beneath, or in close proximity to the illustration; and in such case deception would be avoided if it were as conspicuous and in the same size type as any other price in the advertisement.

## 8. SPECIAL EQUIPMENT OR SERVICE

No advertisement or representation of a room air conditioner or price therefor shall be used which deceptively or misleadingly conceals the fact that the advertised price does not cover necessary or advertised accessories or devices or services which must be purchased with the unit at an additional charge; or which falsely or deceptively states or implies that the advertised price covers such accessories, devices, or service when such is not the fact.

## 9. INSTALLATION

No advertisement of a room air conditioner shall state or imply that the unit can be installed without alterations in present electrical circuits or wiring, or without

additional expense for electrical installation, when such is not the fact.

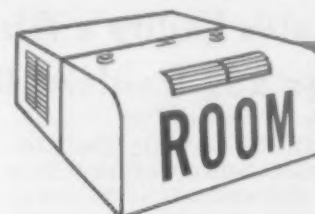
## 10. GUARANTEES

Guarantees or warranties shall disclose conspicuously their exact scope and conditions, and shall be clear as to who is responsible for their fulfillment. If a room air conditioner is advertised as "guaranteed" and the guarantee is not unconditional, material conditions and limitations applicable to the guarantee shall also be stated in conjunction therewith.

Guarantee statements shall disclose any additional charges or expenses required of the purchaser in making them operative. Advertised guarantees which apply to a part, or parts of room air conditioning equipment shall be clearly stated to avoid the impression that they apply to the whole. Service guarantees shall be clearly defined as to their nature and extent. Advertising of "time" guarantees shall be specific as to the period covered.

## 11. DISPARAGEMENT

A room air conditioner shall be advertised and sold on its merits; advertisers shall refrain from attacking competitors or reflecting



## AIR CONDITIONERS

unfairly upon their products, service, or methods of doing business.

## 12. UNDERSELLING CLAIMS

Since it is impossible for any manufacturer or any national or regional distributor of room air conditioners to have complete and accurate knowledge of all prices and conditions in all outlets at all times, general underselling claims shall not be used.

## 13. UNITS NOT NEW

A unit which is used, rebuilt, reconditioned, etc., shall not be represented as new and advertising shall truthfully and affirmatively disclose that such unit is used, rebuilt, or reconditioned.

## 14. DISCONTINUED MODELS

Whenever a price is quoted or featured in an offering of an air conditioner and the conditioner is no longer listed by the manufacturer or sold by the distributor, having been either discontinued entirely or supplanted by another model, and being no longer designated by the trade as a current model, either the year of the model, or the fact that it is a discontinued model, shall be prominently disclosed.

## 15. LAYOUTS

An advertisement shall not be prepared or laid out in such manner as to confuse or mislead the reader with respect to any portion of its composition. Layouts of advertisements shall not be so constructed or brand names so stated as to indicate that the price or prices quoted in advertising are the selling price or prices of the units named or illustrated, unless such is the fact.

## 16. DECEPTION

Deceptive trade-in allowances, fictitious list prices, false and exaggerated comparative prices or savings claims, misleading "free" offers, unfounded superlatives, misleading "rental" offers, and bait advertising shall not be used.

(To avoid the practice of "bait" advertising, any article shall be immediately available, willingly demonstrated, and sold at the featured price to any customer requesting same.)

No attempt to avoid the sale of advertised merchandise, either through the use of disparaging remarks or implications that such goods are not desirable, or otherwise, shall be made.)

## LEADERS RELY ON LAU

## FOR SUPERIOR BELT-DRIVEN BLOWER ASSEMBLIES



## Lau Series "A" Blower Assembly

MILLIONS ARE IN SERVICE



Put your  
Problems up  
to Lau

Our engineering experience is at your disposal. Write for Lau Blower Catalog 707.

Advanced design and quality engineering throughout distinguish this Lau Belt-Driven Blower Assembly—leader in its field. It is far easier to install, lower in final installed cost, superior in performance, and possesses longer trouble-free operating life. Check these major features against your requirements:

One-piece completely adjustable motor mounting that permits any motor location desired. Three-point suspension bearing bracket used for all angles of discharge. Housing base is rigid heavy 16-gauge steel. Entire unit is die-formed. Two-stage centerless ground and burnished shafting with custom-built belt. Perfected Lausteel variable speed pulley allows speed variations up to 30%. Center suspended wheel; positive alignment of wheel to venturi. Lau self-aligning porous bronze sleeve bearings; bearing assembly with long-life lubrication. Embossing of scroll sides reinforces venturi inlet and discharge. Capacity range 350 to 22,000 cfm.

LB-1-55

THE LAU BLOWER COMPANY • 2002 Home Avenue, Dayton 7, Ohio

In Canada • The Lau Blower Company of Canada, Ltd., Kitchener, Ont., Canada

LAU World's Largest Manufacturer of Air Conditioning Blowers

## AIR CONDITIONING AND REFRIGERATION

... the best equipment for all purposes by ...

TEMPERATURE LTD.

BURLINGTON ROAD • FULHAM

Cables: TERTUR LONDON LONDON, S.W.6 • ENGLAND



## Wanamaker Ad Warns Against Bargain, Orphan Room Air Conditioners

PHILADELPHIA — Warning against "bargain price" room air conditioners, John Wanamaker's department store here recently obtained good response from advertisements headed "Will your air conditioner be haunted?" (by a bargain price) and "Why Buy an orphan?"

The "haunted" ad warned: "You can tell a haunted air conditioner by its bargain price. But it's no bargain when these ghosts walk. They appear in envelopes marked 'bill for installation,' 'bill for parts,' 'bill for servicing,' and you pay them all."

The "orphan" ad copy said, "He may look like such an appealing air conditioner . . . at what looks like such a bargain price. But think a minute. Isn't he just being dumped on your doorstep? If anything happens to the unit when you need it (and that's usually when it happens) who can you get to fix it—for an orphan is an air conditioner without a company. . . ."

### PLENTY FOR FREE

For "easy-to-get" product information . . . use coupon on "What's New" page. Use Key No. for fastest service.

## St. Louis Utility's Air Conditioning Forum Brings 285 Dealers, Distributors Up to Date

ST. LOUIS—An "Air Conditioning Forum" sponsored by Union Electric Co. was held at the Union Electric Service building recently, with more than 285 air conditioning dealers and distributors from the St. Louis area in attendance.

Victor J. Farmer, Union Electric planning analyst engineer, told how the use of air conditioning had grown in St. Louis until in 1954 some 60,000 air conditioning units were in use here, with a capacity of 47,000 hp. and creating a load demand of some 75,000 kilowatts a year.

He said his company had installed 7,000 additional transformers and 26,000 larger ones to take care of any anticipated increase in the use of air conditioners for the next five years.

Kenneth E. Gibbons, assistant director of trade cooperation for Union Electric, said that a survey last year revealed 6.7% of Union Electric customers planned to buy air conditioners in 1955. He said it would greatly simplify Union Electric's task if dealers would report to them where and when each air conditioner is installed.

S. S. Sansbury, manager of sales development and training, reported that more attention is now being paid to the element of power factor in air conditioning. This is especially true since more current

is required to run an air conditioner with a low power factor than with a high, it was stated.

Walter G. Heren, director of advertising and public relations, told how newspaper and television advertising was being directed to the customer to get him to modernize his wiring for modern living. He brought out the fact that 50% of all low voltage problems are due to the customer's own lines.

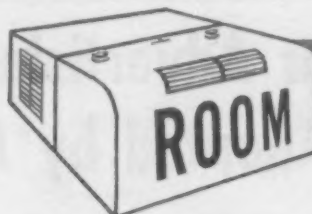
An interested audience kept a panel of experts answering questions for 45 minutes at the end of the meeting.

### North Fla. RACCA Affiliates With National Group

JACKSONVILLE, Fla. — Affiliation of the Refrigeration and Air Conditioning Contractors' Association of Northern Florida with the national RACCA was announced here recently by H. Marshall Lovan, president of the local group.

Lovan said his group has petitioned the Jacksonville city council to amend the city building code by adding an up-to-date refrigeration and air conditioning code and licensing system.

V. C. MacIvaine of Conditionaire, Inc. is secretary of the Florida group.



## AIR CONDITIONERS



NICK SELLATI, assistant manager of Mahoney Air Conditioning Installation Service, uses electronic instrument to show the presence of metal in a wall. The metal protective cover over the air conditioning unit shown here is also a development of the Mahoney firm.

## Electronic Device Locates Metal In Walls, Avoids Unforeseen Installation Problems

MIAMI, Fla.—An electronic device used to check for the presence of metal in walls where air conditioning units are to be installed has proved to be a money and time-saver for Mahoney Air Conditioning Installation Service here.

The firm specializes in installing air conditioners in walls of finished buildings.

Often, the buildings have been built for years and no plans are available to show location of plumbing, wiring, reinforcing steel, etc. Even in new buildings there are often occasions when plans are not accurate and these things show up in places where they are not supposed to be.

Most of the Florida structures are of cement block and stucco. Cutting a hole through a wall is an expensive job. It is even more expensive when the hole is nearly finished and obstructions make it necessary to close the hole.

After trying a number of unsatisfactory methods for locating objects in walls, David Mahoney hit upon the idea of electronics. He finally succeeded in developing a finder which never fails to detect metals. The machine will detect anything from an electric wire to steel beams or rods inside of poured concrete.

The mechanism is enclosed in a small metal box which would easily go into the glove compartment of a truck. The antenna plugs into the top and to conserve space, it may be removed when not in use. The antenna is merely a piece of fibre board with strands of copper wire glued around the outside border.

A whirring signal emitted from a small speaker in the bottom of the unit indicates an absence of metal. When a metal object is in front of the antenna, the sound is abruptly lowered; or if it is a large object, sound is shut off.

A trigger spring switch protrudes from the bottom and when the finger is removed from the trigger, the current is automatically shut off. The unit is made up from a complex assortment of tubes and condensers. Power is supplied by two dry cell batteries of 1½ volts each, plus a XX45 Burgess dry cell battery.

Mahoney says the first instrument cost in the neighborhood of \$400, which included experimental work. However, he says he saved enough to more than pay for it on one job where 60 wall air conditioning units were installed.

Mahoney has no plans for com-

mercial production of the instrument at this time, but he feels that if produced on a commercial basis the cost would be drastically reduced.

Mahoney has developed a number of new ideas in the air conditioning field. The pre-cast concrete frame which is built into cement block walls was reportedly pioneered by Mahoney. One of his more recent developments was a metal cover to protect the outside portion of air conditioning units.



*this daisy*  
will help you  
sell more air conditioners

## It's the symbol of United States Steel's national air-conditioning promotion

This fresh-as-a-daisy promotion is certain to make your air conditioner sales blossom. The campaign breaks with 4-color ads in Life and Time magazines (June 20 and June 13). These ads, featuring the daisy symbol and the promotion theme—"Turn on Spring . . . all year 'round"—will tell readers how to make their homes, stores and offices havens from heat. On the coast-to-coast TV show, The U.S. Steel Hour, Mary Kay and Johnny will sell air conditioning to millions of viewers.

*Order display materials now!*

WRITE TO:

Robert C Myers

Director, Market Development Division  
UNITED STATES STEEL

525 William Penn Place, Pittsburgh 30, Pa.



UNITED STATES STEEL

### WRITE FOR FREE DISPLAY MATERIALS

**2 Big Window Streamers.** These big 44" high x 14" wide banners bearing the daisy symbol and the campaign theme will quickly identify your store with the national promotion. Use them in window and department displays.

**Merchandise Tags.** Bear a 2-color daisy symbol and the campaign theme. Attach tags to air conditioners in floor and window displays. These 2" x 5" tags are available in packages of 50.

**Symbol Reproduction Proof.** This 12" x 18" sheet shows how to reproduce the official daisy symbol in black and white and in 2-colors for use in newspaper advertising, direct mail, car cards, point-of-sale material, television, window displays, 24-sheet posters, magazine ads, and house organs.

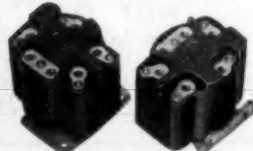
AMERICAN BRIDGE • AMERICAN STEEL & WIRE AND CYCLOPE FENCE • COLUMBIA-GENEVA STEEL • CONSOLIDATED WESTERN STEEL • GERRARD STEEL STRAPPING • NATIONAL TUBE  
OIL WELL SUPPLY • TENNESSEE COAL & IRON • UNITED STATES STEEL PRODUCTS • UNITED STATES STEEL SUPPLY . . . Division of UNITED STATES STEEL CORPORATION, PITTSBURGH  
UNITED STATES STEEL HOWER, INC. • UNION SUPPLY COMPANY • UNITED STATES STEEL EXPORT COMPANY • UNIVERSAL ATLAS CEMENT COMPANY

### A COMPLETE LINE— Designed to Your Requirements



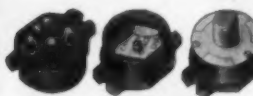
#### SERIES RELAYS

Balanced armature—Can be mounted in any position.



#### POTENTIAL RELAYS

Precision snap-action contacts. Convenient terminal board wiring. Totally enclosed.



#### OVERLOAD PROTECTORS

Patented bi-metal snap-action—Inherent protection. Large solder terminals. Manual and automatic.

Let R-B-M engineering and production facilities serve you. Phone 5121 or Write Dept. M-6.

### R-B-M DIVISION ESSEX WIRE CORPORATION

Logansport, Indiana



Controls for Electronic, Refrigeration, Industrial, Appliance, Communication and Automotive Industries.

### PRESSTITE PERMAGUM®

Sealing Compound



- for sealing joints and seams
- for plugging and caulking in
- Supplied in beads, tape or bulk

See your wholesaler or WRITE

PRESSTITE ENGINEERING CO.  
3774 CHOUTEAU AVE. • ST. LOUIS 10, MO.





TWO TYPICAL displays at the educational exhibit type of show sponsored by Chase Supply Co. of Chicago. More than 140 contractors attended the exhibits, according to Chase Supply.

## Chase Supply, Mfrs. Sponsor Educational Exhibits for Contractors In Chicago Area

CHICAGO—Chase Supply Co., Chicago refrigeration, air conditioning, and heating wholesaler, in cooperation with numerous manufacturers which it represents, conducted a highly successful educational exhibit type show for the benefit of Chicago area contractors recently, the company reported.

"Attendance of contractors was in excess of 140, in spite of the unseasonably hot weather which prevented many from attending because of urgent service calls."

The show was held in a spacious hall rented for the purpose near Chase's south side headquarters. Space was provided for manufacturers' exhibits to permit their representatives an opportunity to discuss new products and developments with the contractors, who showed keen interest.

Highlights of the program included a door prize drawing, showing of the new Air-Conditioning & Refrigeration Wholesalers film entitled "How to Sell Quality," and a snack and refreshment bar which was in operation during the entire show.

Exhibitors included A-P Controls, American Brass Co., Bell & Gossett, Betz Corp., Bush Mfg. Co., Copeland Refrigeration Corp., Detroit Controls Corp., Dole Valve Co., duPont Chemicals, General Controls, Henry Valve Co., Herman Goldberg Co., Linde Air Products, Marsh Corp., McDonnell-Miller, McIntire Connector Co., Minneapolis - Honeywell, Mueller

Brass Co., National Radiator Co., Ridge Tool Co., Sporlan Valve Co., Superior Valve Co., Temprite Products, White Products Corp., and White-Rodgers.

Jack Glass of Chase Supply acted as master of ceremonies for the show. He promised to conduct similar type shows in the future as a result of the great interest exhibited by the contractors.

### Wholesalers Name Rylander As Advertising Consultant

COLUMBUS, Ohio—The Air-Conditioning and Refrigeration Wholesalers recently announced the appointment of Lloyd C. Rylander, Rylander Advertising, Chicago, as advertising consultant.

Rylander has submitted a plan designed to assist wholesalers in obtaining cataloging material that will enable them to compile their own catalogs for offset printing at considerable savings to both wholesalers and manufacturing suppliers represented in their catalogs.

In addition to catalog preparation, Rylander will also handle Association publicity and promotion.

Rylander began his association with the air conditioning, refrigeration and heating field as a catalog compiler with Markham Advertising of Chicago. He later served as advertising and sales promotion manager of Chase Supply Co. of Chicago and the Service Parts Co. of Melrose Park, Ill.

## Brunner Names Albert, Cox as District Mgrs.

UTICA, N. Y.—Frank C. Hawk, vice president in charge of sales for Brunner Mfg. Co. here, has announced the appointments of Charles F. Cox as district sales manager of a newly-created south-central territory and Raymond G. Albert as Iowa-Nebraska district sales manager.



R. G. Albert

In addition to Brunner Mfg., Cox and Albert will represent the company's affiliated firm, The Brunner Co. of Gainesville, Ga., manufacturer of an expanding line of semi-hermetic refrigeration units. They will call on refrigeration, automotive, and allied accounts in their territories.

Cox will make his headquarters in Jackson, Miss. His territory will include Alabama, Mississippi, Louisiana, and parts of Arkansas, Tennessee, and Florida.

Until his appointment, Cox was president of his own contracting firm, Charles F. Cox, Inc., in Washington, D. C., with operations in

Virginia, Maryland, and the District of Columbia.

Previous to that, he was chief engineer and sales manager of Clyde Hagerty Co., Inc., Washington.

Albert fills a vacancy caused by the recent retirement of J. R. Reid. Albert will make his headquarters in Des Moines.

He recently represented Vincent Refrigeration & Heating Supply Co., Minneapolis wholesaler, in southern Minnesota and northern Iowa.



C. F. Cox

### Frozen Food Producer Asks For More Display Space

NEW YORK CITY—"Our industry could be killed if we reach the point of out-producing retail frozen food cabinet space," Paul M. Jacobs, vice president of Gorton-Pew Fisheries Co., declared here.

He called on all frozen food associations to use their influence with cabinet manufacturers to develop a multi-level frozen foods case so that food retailers could expand within existing space.

Speaking at an Eastern Frosted Food Luncheon for the local frozen foods industry, he urged their associations to make a supermarket study to determine what it cost to run a frozen food department. He wanted the survey to also study how best to distribute frozen foods and the extent of retailer profit, so that facts could be uncovered to justify more retail space for frozen foods.

## Warren Names Winners of 'Florida Fishing Frolic'

ATLANTA—The Warren Co., commercial-refrigerator manufacturer here, has announced the completion of a new type of sales contest, the "Florida Fishing Frolic."

The contest was named for the five first prizes, a week's Florida Fishing Frolic to the top quota producer in each of the five national divisions set up for the contest. The 15 supporting prizes were silver-service assortments.

The top Frolic winners were: Electric Refrigeration Co., Seattle; Harry Gold, Montreal, Can.; J. Wesley Rice, Martinsburg, W. Va.; Gardner Refrigeration Co., Nashville, Tenn.; and C. J. Ledbetter, Orlando, Fla.

The five winning representatives assembled in Atlanta on Sunday morning, were shown the sights and hosted by the company's president, J. D. Harris, at a beautiful dinner party at his home.

After a trip through the Warren plant, including the company's entirely new 100 by 200-ft. production annex, they were off via Delta's DC-7 Royal Poinciana to Miami.

The party of eight on two chartered 42-ft. boats headed for the excellent fishing waters of the Gulf Stream and the Florida Keys, two nights lodging at the yachtman's haven, the Ocean Reef Club, at Key Largo, Fla.

way ahead of its time... this

**AUTOMATIC**  
*money*  
**ICE MAKER**



DOUBLE-DUTY

*Crystal Tips or Chips*

MODEL B-200

**AUTOMATIC ICE MAKER**

The all new Crystal Tips B-200 ice maker's 2-in-1 feature puts it "ahead of its time" and the field. See it and you'll agree that it makes all other ice makers obsolete.

The Crystal Tips 2-in-1 feature provides both cubed and chipped size ice without grids or extra crushing mechanisms. One B-200 gives you two ice makers for the price of one. No need for accessories that add to your cost.

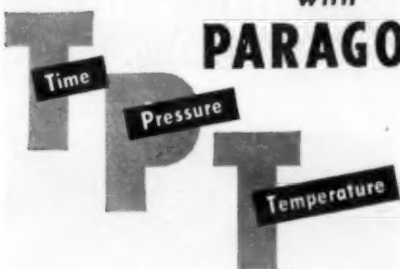
In 24 hours the B-200 produces over 3,700 large, individually frozen, uniformly sized, easy handling circular pieces of ice. The bin stores a full day's production.

Installation is simple, needs only 1/4" supply, nominal drain, and 115 volt current. It is a good money maker for any dealer.

### IT IS A REAL MONEY MAKER!

Every quantity user of ice is a prospect for this versatile 2-in-1 unit. The prospect's own figures on present costs of ice show him how the Crystal Tips or Chips Ice Maker pays for itself. Literature and mailing pieces supplementing the national advertising are available for your direct mail use. Write for further information.

Now you can offer  
**100% fail-safe protection**  
for all automatic defrosting  
with  
**PARAGON**



"de-frost-it" with  
remote control

Here's refrigeration protection at its best — with a nice profit for you! Saves customers worry about costly food spoilage... ends guessing and call-backs for re-setting.

Key to 100% fail-safe defrosting of any low temperature or normal temperature system is the built-in 45-minute termination dial. If the pressure switch is not actuated for some reason,

a pin on the dial automatically terminates the defrost cycle. Action is positive, sure! Guards against low ambient, gas shortage or inoperative condenser. Protects against failure of pressure/temperature cut-in switch or improper defrosting. Install a TPT "de-frost-it" on your next job. Order from your Refrigeration Equipment Wholesaler or write Dept. 1687 for Bulletin.

**AUTOMATICALLY COMPENSATES DEFROST TO LOAD AND ATMOSPHERIC CONDITIONS**

Once set, length of defrost period is 100% self-adjusting. Seasonal weather changes have no effect. Two models available: TPT 303 (hot gas) and TPT 305 (electric heat). Both units are remotely controlled by pressure switch or thermostat. Set for 1 to 8 defrost cycles per day.

**One more Paragon profit opportunity!**

**PARAGON ELECTRIC COMPANY**

TWO RIVERS, WISCONSIN  
WORLD'S FOREMOST MANUFACTURER OF TIME CONTROLS

**AMERICAN AUTOMATIC ICE MACHINE CO.**

1785 Fourth Street N.W.

Faribault, Minn.

A Subsidiary of McQuay, Inc., Manufacturers of Heat Transfer Equipment Since 1923



## INSIDE DOPE

Learn to live and laugh—  
Thus delay your epitaph

By **GEORGE F. TAUBENECK**

(Concluded from Page 1, Col. 1)

### Memo to Drew Pearson

Yesterday we received an "invitation" to subscribe to Drew Pearson's new weekly Washington Letter (a la Kiplinger).

Herewith we offer, for free, a suggestion. Why not call it "Pearson to Person," sir?

### Memo from Jack Sweet

Add fascinating company names: Continental Say-When Corp., Cleveland, which is in the liquid dispenser manufacturing business.

### Philosophy of the Week

"The first time you are wrong, get right."—WARREN GILES, president of the National Baseball League.

### Southpaw Pussies

Did it ever occur to you that cats are left-handed? They are, indeed, according to Oxford University's Dr. J. Cole, director of

Oxford's Physiology Lab.

Of all Noah's Ark descendants, only Pussy Cat and Poll Parrot predominantly are southpaws, Dr. Cole's research reveals.

Perhaps further study of their vagaries would uncover information useful to baseball managers.

Just thought you might like to know.

### Practical Wire-Tapping Rebuff

How can you foil wire-tap spies? Install a neon sign next to your telephone.

As a self-transformer, it produces nothing but a roar for unwanted wire-tappers.

### Readers Always Write

1541 Crestview Drive  
Springfield, Ohio

Editor:

Noticing the fancy words under "How's That Again" on page 14 of a recent issue I enclose a few more for your edification.

The pedagogue might say, "in promulgating you esoteric cogitations, or articulating your superficial sentimentalities and amicable, philosophical, or psychological observations, beware of platitudinous ponderosity. Let your conversational communications possess a clarified consciscence, a compact comprehensibility, coalescent consistency, and a concatenated cogeneity. Eschew all conglomerations of flatulent garrulity, jejune babblement, and asinine affectations. Let your extemporaneous descantings and unpremeditated expatiations have intelligibility and veracious vivacity without rododromade or thrasonical bombast. Sedulously avoid all polysyllabic profundity, pompous prolixity, psittacine vacuity, vaniloquent verbosity, and vaporous vapidty."

An educator would put it about like this, "Say what you mean and don't use big words."

Boss Ket said, "If a man can't say it in plain short words, he don't know what the hell he's talking about."

GLENN MUFFLY

SNIPS Magazine  
Chicago 44, Ill.

Editor:

It has been a long time since I had the pleasure of seeing you and meeting you, although I do recall having had that pleasure quite a few years ago. I remember on one occasion where you filled in while we were waiting for a representative of the War Production Board to show up for a speech, and you told a story about a member of a Civic Organization who was sent to Paris, and the theme of the story was that he had never seen anything like that in Indianapolis, Kokomo, or Muncie. I remember quite well that you brought down the House, and I have never forgotten how cleverly you told it.

May I send you my congratu-

tions on the fine newspaper you put out? I see a copy which is brought into our office by one of the men who subscribes and has it go to his house. Many years ago, I used to work on a Weekly, and all I can think of in reading your own good newspaper is that you have a lot of fun 52 times a year, whereas we folks who get out the monthlies don't have quite as much.

CHARLES BISHOP

### When to Phone an Executive

(From Westward)

Nine to 9:30: Not now. Mr. Squill's just arrived at the office. He's still smoothing his feathers over the way some people run railroads. 9:30 to 10:00: Incoming mail time. Not yet. 10:00 to 10:30: Avoid. Meetings in progress. You wouldn't want to interrupt him now. 10:30 to 11:30: He's phoning his clients. 11:30 to 12:00: Secretary's time. She's getting him to sign Mondays' mail and might easily tell you he's in Indianapolis.

12:00 to 2:30: Haven't you ever read any books about salesmanship? 2:30 to 3:00: He's thinking he should have had something lighter for lunch. This would be an unfortunate time to call. 3:00 to 3:30: Now, your lunch is beginning to bother you.

3:30 to 4:00. This is when all the other salesmen call. 4:00 to 4:30: You've dawdled too long! It's too late in the day to start a sales presentation. Might as well wait for tomorrow. 4:30 to 5:00: But maybe Jones is calling him, offering him that new model at a cut-rate price. The cad!

5:29: Try it now. He's relaxed, genial, the cares and crises of the day all cleaned up. "Hello. Mr. Squill, please? He's gone for the day? No thanks, I'll call him first thing in the morning."

### Capricious Management Faulted

Recent studies at the University of California reveal that "listening" and "avoiding snap judgments" are two of the most valuable assets of an executive.

Most successful managers were those who drew out other people in conversation, held off any decision until they had something to go on, and frequently modified or reversed their first impressions.

### Resumed Fun

Single gals wonder if there's a man in their future. Married gals wonder if there's a future in their man.—Wildrooter.

"All I know about the speed of light," grumped the Office Cynic, "is that it arrives too early in the morning."

### Cake Baking Recipe for Mothers

Light oven; get out utensils and ingredients. Remove blocks and toy autos from table. Grease pan, crack nuts. Measure 2 cups flour; remove Johnny's hands from flour; wash flour off him. Remeasure flour.

Put flour, baking powder, and salt in sifter. Get dustpan and brush up pieces of bowl Johnny knocked on floor. Get another bowl. Answer doorbell.

Return to kitchen. Remove Johnny's hands from bowl. Wash Johnny. Answer phone. Return.

Remove ¼ inch salt from greased pan. Look for Johnny. Grease another pan. Answer telephone.

Return to kitchen and find Johnny. Remove his hands from bowl. Take up greased pan and remove layer of nutshells in it. Head for Johnny, who flees, knocking bowl off table. Wash kitchen floor, table, walls, dishes. Call baker. Lie down.—Today's Woman.

### Ulcers Are Bad for the Company

"The tense, stem-sinding, ulcer-stricken executive is going out of style. More and more firms are using training methods to develop low-pressure work habits among the lower levels of executives, grooming a new species of administrator to replace the hard-driving, high-tension men at the top.

"Why? Production records show that there is a greater work output under a relaxed boss. There are also fewer accidents, better company morale and less employee turnover.

"Another reason is that the relaxed executive is less likely rendered *hors de combat* by ulcers or heart trouble, and less likely to lose his higher mental powers—his learning, memory, and judgment—as he grows older."—DONALD A. LAIRD.

### Last Laughs

Money isn't everything, and don't let anybody tell you it is. There are other things, such as stocks, bonds, letters of credit, travelers' checks and drafts.—Marysville Advocate.

Actress Joan Crawford takes a fourth husband and a first airplane ride. Nothing like a fourth marriage to make a girl want to try something new.—FLETCHER KNEBEL.

the best performers on earth  
MUELLER BRASS CO. *Streamline*  
REFRIGERATION AND AIR CONDITIONING PRODUCTS

Step right this way, refrigeration men, see the spectacular parade of the greatest performers on earth now at your wholesaler's.

A real seal is what you get with Mueller Brass Co. Wrot Fittings. A soldered joint with these fittings gives you a leak-proof system that's as much at home with refrigerants as the seal is in the frigid Arctic.

wrot fittings



The zebra is kind of a combination animal, shaped like a horse and striped like a cat . . . another real slick combination is the Mueller Brass Co. Angle Type Cartridge Drier-Strainer!

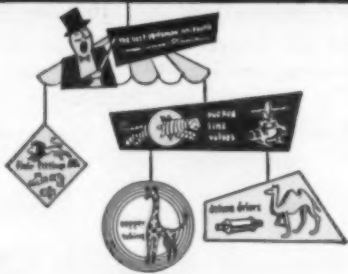
The mighty elephant is quick to sense trouble. The same is true of Mueller Brass Co. Liquid Indicators: quick as a glance they tell you of a refrigerant shortage or a restriction in the line.



liquid indicators

SEE THIS DISPLAY AT YOUR WHOLESALE'S

This ad only shows part of the parade . . . see the giant, colorful "flying mobile" now on display at your wholesaler's, attracting attention to the "best performers on earth".



MUELLER BRASS CO. PORT HURON 9, MICHIGAN

152

"A CASE OF COOL JUDGMENT"



FLO-COLD  
DRINKMASTER  
STAINLESS STEEL  
CUBER—COOLER.

SOLD THRU DEALERS ONLY

WRITE  
United Friguator Engrs.  
MENOMINEE, MICH.  
AVAILABLE IN SIZES 4 TO 10 FT.

ASPIR-JET  
SPRAY NOZZLES RAISE  
TOWER EFFICIENCY

The swirling, atomizing action of the water as it goes through the Aspir-Jet means more effective heat transfer and higher efficiency from any spray-filled cooling tower. Pressure as low as ½ pound gives effective water break-up and distribution. Formed of butyrate plastic, Aspir-Jets will not corrode.



• Available through Refrigeration and Air Conditioning Wholesalers.

Manufacturers & Refrigeration Wholesalers: if you are not now using or stocking this astounding new product, wire or write

THERMAL AGENCY

National Sales Agents  
1515 DALLAS • HOUSTON, TEXAS



"Trouble-free performance . . . makes satisfied customers for me," says Ernest W. Farr, Bell Refrig. Corp., Cleveland.

TO GET ON THE MOST PROFITABLE FACTORY-DEALER TEAM IN THE BUSINESS, TIE UP WITH

TYPHOON  
AIR CONDITIONING

505 Carroll St.,  
Brooklyn 15, N. Y.

• COMMERCIAL AIR CONDITIONERS, 3 TO 35 TONS  
• RESIDENTIAL YEAR-ROUND UNITS FOR GAS OR OIL  
• ROOM AIR CONDITIONERS, ½, 1½, 2½, 4, 6, 8 H.P.  
• PACKAGED HEAT PUMPS, RESIDENTIAL & COMMERCIAL



## ASHAE Meeting Program--

(Concluded from Page 1)

Gen. Dean will speak at the welcome luncheon on Monday, June 27. Dr. Zarem will be the speaker at the semiannual banquet Wednesday evening. His subject is "Smog—A Challenge to Technology."

ASHAE president, John E. Haines, and first and second vice presidents, John W. James and Peter B. Gordon, will preside respectively at the opening of each of the technical sessions.

### SUBJECTS FOR DISCUSSION

Subjects planned for the first session are the measuring of heat flow through a test house with an analogue computer, winter design temperatures in Canada, and the calculation of heat flow through a flat roof by direct measurement.

The amount of air required to keep workers comfortable in commercial laundries, an analysis of the cause of odors in air conditioning coils, and a report on the measurement and breakdown of dust particles sampled from the air in the laboratory will be the nature of the papers scheduled for the second session.

Arranged for the third session are a report on the presence and causes of gases in hot water heating systems, an explanation of a chart for designing cooling towers, a study of wooden louvers to determine reduction of frictional resistance to air flow, and how the sizing and location of room air outlets can change patterns of air movements.

### TITLES OF PAPERS

Titles of the papers are as follows:

"Electric Analogue Prediction of the Thermal Behavior of an Inhabitable Enclosure," by Harry Buchberg, from the University of California.

"A Method for Determining Winter Design Temperatures," by M. K. Thomas, deputy superintendent,

ent, Climatology Section, Canadian Government.

"Periodic Heat Flow Through Flat Roofs," by Merle L. Erickson, research assistant, University of Minnesota, and Donald J. Vild, research engineer, George V. Parmelee, senior research supervisor, and A. N. Cerny, research mathematician, ASHAE Research Laboratory.

"Ventilation of Commercial Laundries," by Sidney Marlow, industrial hygiene engineer, New York State Department of Labor.

"Air Conditioning Coil Odors," by A. B. Hubbard, liaison engineer, General Electric Co., and Nicholas Deininger and Frederick Sullivan, senior research chemists, Arthur D. Little, Inc.

"Size Distribution and Concentration of Airborne Dust," by Kenneth T. Whitby, research associate, and Professors Axel B. Algren and Richard C. Jordan, University of Minnesota.

"Sources of Vent Gas in a Hot Water Heating System," by L. N. Montgomery, research associate, and Professor Warren S. Harris, University of Illinois.

"Psychrometric Analysis for Design of Forced Draft Cooling Towers," by Samuel E. Agnon, mechanical engineer, Haifa, Israel, and Professor Benjamin H. Spurlock, University of Colorado.

"Resistance of Wooden Louvers to Fluid Flow," by Charles W. Bevier, research assistant, Texas Engineering Experiment Station.

"Performance and Evaluation of Room Air Distribution Systems," by Professors Alfred Koestel and G. L. Tuve, Case Institute of Technology.

It is planned that the Evaporative Cooling Symposium will cover the following subjects: Historical, air cooling by evaporation, evaporation from surfaces, weather data limitations, geographical limitations, system design, indirect systems, and water treatment.

William T. Smith will serve as chairman of the symposium. Speakers will include R. E. Phillips, S. F. Duncan, R. J. Petersen, Stuart Giles, Robert Ash, Richard Hukill, D. T. Robbins, and R. M. Westcott.

## American-Standard Names Herron, Spitzel As District Managers

NEW YORK CITY—Appointments of J. F. Spitzel as east central district manager and Richard L. Herron as west central district manager for the Air Conditioning Div. of American Radiator & Standard Sanitary Corp. have been announced by H. E. Rossell, Jr., sales manager.



J. F. Spitzel

The sales territories under Spitzel's supervision will be Boston, Buffalo, Cleveland, Detroit, Ohio, Pittsburgh, and Tri-State area.

Spitzel started in the plumbing and heating business in 1939. In 1943 he joined W. A. Case & Son Mfg. Co., Buffalo, as a salesman, later becoming assistant branch manager and finally heating sales manager of all branches of the company before joining American-Standard.

Herron will make his headquarters at 816 S. Michigan Ave., Chicago. The sales territories under his supervision are Chicago, Kansas City, Minnesota, Omaha, St. Louis, and Wisconsin-Illinois.

He attended Tulsa university two years before entering the Air Force in 1942.

In 1952 he joined American-Standard as a warm air specialist in Kansas City. In June, 1953, he became district representative in Kansas City territory for the company's Air Conditioning Div.



R. L. Herron

## Laughna Heads Executive, Management Development Program at Airtemp Div.

DAYTON—C. E. Buchholzer, president of the Airtemp Div. of Chrysler Corp., recently announced a new executive development and management development programs directed by F. J. Laughna. R. C. Martin has been named management development coordinator.

Buchholzer declared, "The department will have the responsibility to plan, initiate, direct, and administer active programs designed to provide adequate reserves of trained personnel capable of assuming greater responsibility within the division."

"New programs now being put into effect will be applicable to all categories of division management. That is, our top-level executives, as well as foremen and other supervision groups, will be groomed via special training and guidance to take over more important, more vital assignments."

## Main Line Supply Co. Now In Full Scale Operation

DAYTON—Owners of Main Line Supply Co., Inc., wholesaler of air conditioning supplies, announced that the firm is now in full scale operation at 330 S. Ludlow St. where it has leased 15,000 sq. ft.

Owners of the new firm, all experienced in the air conditioning business, are Dick E. Tullis, president; Don R. Ireland, vice president; Lawrence P. Brehm, secretary; and Fred J. Kroger, treasurer.

**NEW AIR CONDITIONER**  
anyone can afford!

**AIR COOLED...COOLS ENTIRE HOUSE!**

Uses no water. 5 times cooling capacity of most window units. Also available for roof or ceiling installation. Standard electrical connections. 5-year guarantee.

**WRITE today for details. Franchise dealerships available.**  
**GENERAL AIR CONDITIONING CORP.**  
Dept. AD-2 4542 E. Dunham St., Los Angeles 23, Calif.  
**NATIONWIDE SALES AND SERVICE**

**AIR CONDITIONING AND FORCED AIR HEATING SYSTEMS COMBINED IN MINIMUM SPACE. UTILIZES EXISTING HEATING DUCTS.**

**FLOOR MODEL**  
2 h.p.  
Compact unit requires no ducts, does an exceptional cooling job in the average home. Ready for easy installation.

**ATTIC, ROOF OR OUTSIDE INSTALLATION UNITS.**  
2 and 3 h.p.  
Completely waterproof and insulated against heat of sun. Can also be used for slab floor or basement tie-in. Uses existing ducts.

## THE MASTER SERVICE MANUALS - - -

— — — and other books of the Refrigeration Library are depended upon as textbooks in trade schools from coast to coast.

**BUSINESS NEWS PUBLISHING CO., DETROIT**

**HOT**  
months ahead mean  
**COOL PROFITS** now  
with **SERVEL**  
**Supermetic!**

**SUMMERTIME** is quittin' time for old refrigeration units. So right now—before thermometers soar—start making the most of the big and ready-made condensing unit replacement market.

**SELL SERVEL SUPERMETIC—** the Profit Line. It's a sure way to shoot your present income higher, while building a brighter business future. And you can get a Servel hermetic quickly and conveniently . . . through your near-by Servel Wholesale Supplier. Over-the-counter "one-stop" service saves time, helps you get back on the job, pleases customers who need constant dependable refrigeration.

**BEAT THE HEAT —** and your hottest competition—sell Servel SUPERMETIC for every replacement requirement. Servel hermetics are simple to install, easy to check. Interconnections are completely assembled. Ask your Servel Wholesaler for a copy of factory manual containing complete installation and maintenance instructions.

**DON'T WAIT TOO LONG . . .**  
**MAIL COUPON TODAY!**

**Servel**

**THE NAME TO WATCH FOR GREAT ADVANCES IN REFRIGERATION AND AIR CONDITIONING**

SERVEL, INC.  
COMMERCIAL REFRIGERATION DIVISION  
EVANSVILLE 20, INDIANA

Send full details about Servel Supermetic and name of nearest Wholesale Supplier:

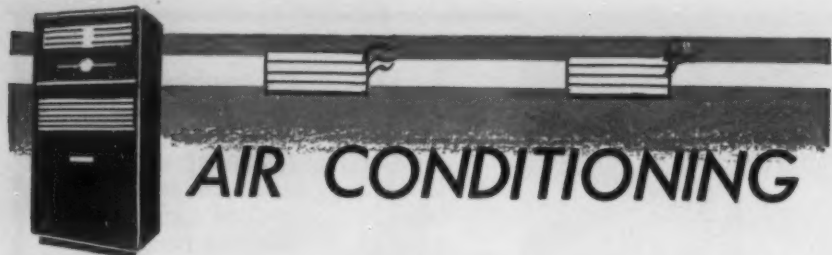
NAME (personal) \_\_\_\_\_

TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_

CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_





## AIR CONDITIONING

### Drayer-Hanson Installs Air Conditioning In 302-Room Luxury Hotel In the Bahamas

LOS ANGELES—Drayer-Hanson has announced that its air conditioning equipment installation is now completed at a giant new luxury hotel—the 302-room Emerald Beach hotel in Nassau, The Bahamas.

The \$3,500,000 project is said to combine the eye-appeal and comfort of the ultra-modern with the Old World Colonial, yet retain certain basic native influences.

This is reported to be one of the biggest projects yet undertaken in the Bahamas. The five-story structure, sprawling beside sea and sand, features on the exterior, a huge patio and lounging area with 68-ft. swimming pool.

Fronting the shoreline is The Beach Club, a single-story L-shaped wing, with guest rooms, showers, changing rooms, and bar.

"From the first step inside, through the antique-tiled exterior, visitors are aware of the central

motif: coolness—the combination of pale, cool decorator colors, the presence of Drayer-Hanson refrigerated air conditioning supplied to all public space areas," the company said.

Part of the D-H equipment selected to do the air conditioning job is 303 "Spotaire HRC" units, it is explained.

These units, consisting of an independent blower and coil component, are located in each separate guest room.

Six heavy Drayer-Hanson air handling units (the HH Series), compressors, and other auxiliary equipment are located in maintenance areas, far removed from the hotel's guests.

Contract negotiations for the manufacturer were finalized by Kelsey & Sanders, Miami, Drayer-Hanson representative in that area. Installer was Matthew Hall & Co., Ltd., London.

### Refrigeration Cools Off Hot Headed Genius—Univac

SPRINGFIELD, Ill.—The more than 5,000 electronic tubes in the "Univac"—Remington Rand's electronic computer—being installed at the Franklin Life Insurance Co. here produce over 400,000 B.t.u. of heat per hour.

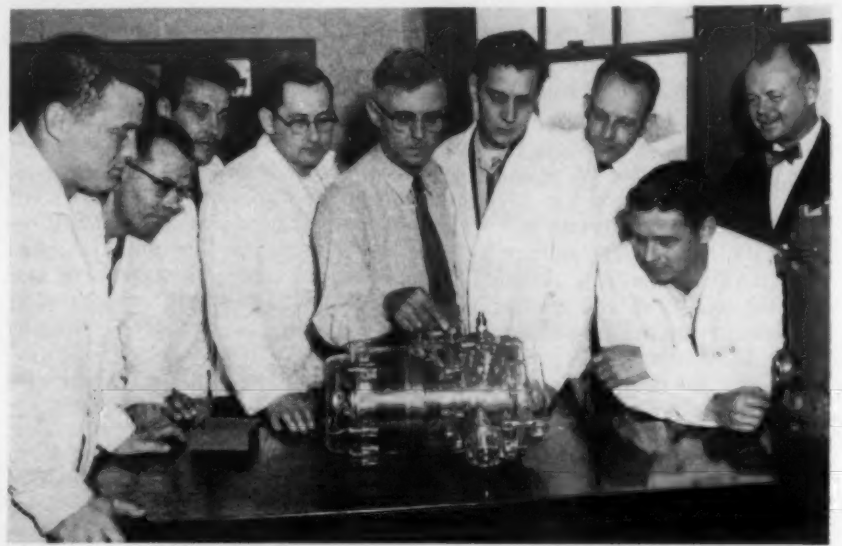
This is enough to heat 20 average-size six room homes, it was pointed out.

To maintain adequate operating temperatures, a Worthington liquid chiller refrigeration unit will furnish cooling equivalent to 60 tons of ice per day. The installation is one of the first for private commercial use.

### Worthington Names Outlet In Oklahoma City

HARRISON, N. J.—Appointment of Loeffler-Greene Supply Co., Oklahoma City, as wholesaler of Worthington air conditioning equipment has been announced by Worthington Corp.

A well-known plumbing and heating wholesaler in Oklahoma, Loeffler-Greene will distribute Worthington central station and packaged air conditioning equipment in Oklahoma City as well as in certain other counties of the state. Frank Loeffler, Jr. is president of the firm.



### Finding Out What Makes the 'Heart' Tick

OPERATION of "the heart of an air conditioner," the compressor, is always of primary interest to servicemen who attend the factory training schools held at Chrysler Airtemp, Dayton. Because of "student" interest, the components and mechanics of the sealed radial compressor are covered thoroughly during the company's weekly school programs. Servicemen first observe the units being factory assembled and tested. Instructors then cover parts and operation during classroom sessions. As their final test, the men tear down and reassemble a complete compressor. H. F. Pottenger, instructor, is shown discussing compressor features and operation with a group of cooling dealer servicemen who attended Airtemp's April 25 school. Left to right: William Winger, Grove City, Pa.; Donald E. Heffernan, Franklin, Pa.; James Brown, Clearfield, Pa.; Richard M. Buchner, Milwaukee; Pottenger, Tony Kappl, Milwaukee; William A. Gibson, Meadville, Pa.; Robert Murphy, Milwaukee; and J. A. Clarke, Airtemp sales training manager.

### Medical Towers Bldg. Gets 'Super Weather' Air Conditioning System

HOUSTON, Texas—The new Medical Towers building now under construction will have "the world's second super weather conditioning system," its builders believe—one in which one room may be cooled and the adjoining one heated.

Howard Singer, one of the two builders of the 18-story building in Houston's Texas Medical Center, said only one other major building in the U. S., a hospital, has the kind of system planned for the new building.

The high-pressure double-duct system calls for use of high-pressure weather mixing chambers and outlets for air distribution.

On the 18th floor will be the air handling equipment. In the basement will be two 300-ton refrigeration compressors, two low-pressure steam boilers, and auxiliary equipment.

"This complete individual control is particularly advantageous for a medical building such as this," Singer said, "because we can heat examining rooms, where patients dress and undress, and cool heavily populated reception rooms. Weather conditions in each room can be adjusted to any temperature."

The building will have a 13-story tower exclusively devoted to medical offices.

### Railroad Coach Factory In India Gets Cooling

BOMBAY, India—The administration building of the Integral Coach factory of Madras, India, will soon have the largest, single "Freon-22" installation of air conditioning in the entire country according to Blue Star Engineering Co., Ltd. here, distributor of Worthington Corp.'s air conditioning and refrigeration equipment.

The installation will include three Worthington "Freon-22" refrigeration compressor units and two shell and tube type condensers, making a total of 180 tons of refrigeration.

The Integral Coach factory will be India's first railroad coach factory and will be completely owned and operated by the Indian government.

### Children's Mercy Hospital In K. C. Gets Conditioner

KANSAS CITY—A 1-ton air conditioning unit presented to the Children's Mercy hospital by the Kansas City Young Matrons is now serving the hospital's cardiac ward.

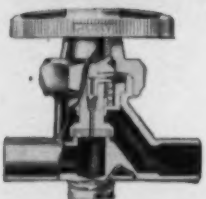
Another unit was installed in the ward previously and the second unit completed air conditioning of that section. A drive to obtain air cooling units for other areas of the hospital was being conducted recently.

# HENRY

## LINE VALVES really give you something extra

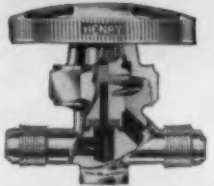
They give more dependable service because of advanced field-proven design and construction as well as patented features.

**PACKLESS VALVES**  
FOR FREON  
with Exclusive  
Balanced-Action



#### STANDARD TYPE

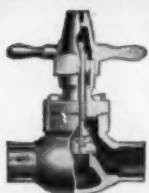
Ball check in balancing channel permits diaphragm inspection and replacement with valves under line pressure. Sizes 1/4" thru 3/4" flare; 1/4" thru 1 1/2" O.D. Solder, 1/4" thru 1 1/2" F.P.T.



#### BLUE BANTAM TYPE

Same as standard Balanced-Action valve except that diaphragms cannot be inspected or replaced under line pressure. Size 1/4" thru 3/4" flare and O.D. Solder.

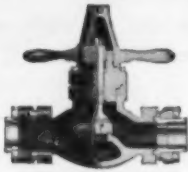
**PACKED VALVES**  
FOR FREON  
Bronze-Wing  
Cap Type



Globe and angle types with solder connections, bolted bonnets, sizes 1/4" thru 4 1/2" O.D.

#### SEMI-STEEL WING CAP TYPE

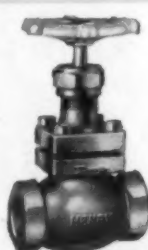
With bolted bonnets, complete with companion flanges. Available in globe and angle types in sizes 1/4" thru 6". Can be furnished with separate forged brass O.D.S. adapters, or separate steel butt weld adapters. Valves are also supplied with one piece forged steel flanges with F.P.T. connections or slip-on welding connections. Also Globe and angle types with F.P.T. connections, sizes 1/2" thru 2 1/2".



**PACKED VALVES**  
FOR AMMONIA  
Permanent-Mold Iron  
and Semi-Steel



Compact and strong with self-aligning stem disc. Sizes (F.P.T.), screw bonnet: 1/4" thru 1", bolted bonnet 1 1/4" thru 2 1/2"—with flange connections 1 1/4" thru 6"—both flange and angle types.



HENRY—Standard equipment by leading Manufacturers, Army, Navy, Coast Guard and Maritime Commission • Stocked by Leading Jobbers  
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## HENRY VALVE CO.

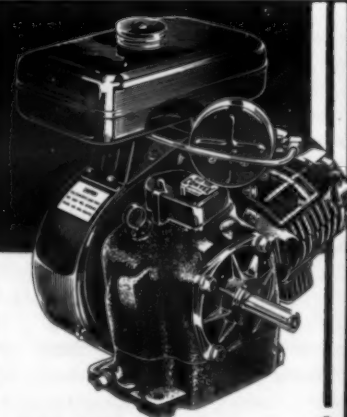
Valves—Driers—Strainers—Control Devices and Accessories for Refrigeration, Air Conditioning and Industrial Applications  
MELROSE PARK, ILL. (CHICAGO SUBURB)  
CABLE: HEVALCO, MELROSE PARK, ILLINOIS



### Extra-Tough JOBS Call for EXTRA-DEPENDABLE POWER

The more you have to gain through uninterrupted performance, the more you need the extra dependability of Red Seal® heavy-duty air-cooled power. Carter center-bowl type carburetor, improved manifolding, valving and cooling, join with greater displacement to give you more "lug" at low speeds—more usable power at high—greater dependability and economy throughout the entire range.

SERVICE FACILITIES AND RED SEAL PARTS AVAILABLE EVERYWHERE



MODEL AUBS  
NOTE COMPACTNESS—This 3-h.p. engine is 13 1/4" high.

#### OPTIONAL RED SEAL FEATURES

Patented, exclusive Contex® external ignition system, instantly accessible for adjustment or repair... Automatic ignition cut-off stops engine if oil level falls dangerously low... New, sure-grip recoil starter assures instant starting every time... 6:1 reduction gear may be mounted in any of four positions... Engines may be had for operation on kerosene.

Continental Motors Corporation  
AIR-COOLED INDUSTRIAL ENGINE DIVISION  
12800 KERCHEVAL AVENUE • DETROIT 15, MICHIGAN





## 'The Larger the Store, the Greater the Sales Volume Per Sq. Ft.,' Report Shows; Convenience Foods, Name Brands Attract Customers

CLEVELAND—As cost of operations increases, it becomes increasingly important to know just how much merchandise must be moved per foot of selling area to insure profitable operations. A. C. Nielsen, Jr., told the Super Market Institute here recently.

"When this fact is known, it becomes possible to better evaluate the amount of space which can safely be allocated to various commodities, as well as the margins which will be required," he explained.

Nielsen is executive vice president of the A. C. Nielsen Co., which has operated the Nielsen food index for the past 21 years.

### BASED ON \$4,000 PER WEEK AVERAGE

He reported on data gained from a Nielsen survey of self-service supermarkets doing more than \$4,000 of business per week. This, he says, represents the average situation existing in the United States during 1954.

Nielsen declared that, on the average, the larger the store, the greater the sale enjoyed per square foot.

Stores surveyed with more than 10,000 sq. ft. had an average size of 14,600 sq. ft. of selling area and

sold \$2.66 per sq. ft. each week. This was 18% better than the results obtained for stores of between 3,500 and 5,000 sq. ft., he said.

Stores doing more than \$30,000 per week averaged \$3.63 of business per sq. ft. as compared with only \$1.85 per sq. ft. for stores doing less than \$10,000 per week.

"While these figures might be considered as par," Nielsen stated, "there were some fairly wide variations in each group."

"For example, quite a few of the stores in the 10,000 sq. ft. and up size were able to achieve sales of more than \$4 per sq. ft., even reaching \$5.50 to \$6 in isolated cases."

"The highest figures of all, however, were achieved by a small group of stores doing around \$4,000 per week. Some of these stores hit figures above \$6, with one reaching \$6.63."

"In our judgment, these stores were not rendering what most operators would consider to be satisfactory service to customers. Aisles were crowded, there were delays at the checkout counters, and it appeared that these stores were vulnerable to competition from a new store in the area."

Nielsen's survey found that self-service stores with from 3,500 to

5,000 sq. ft. of selling area did an average business of \$3,429 per week per checkout counter.

Stores with 5,000 to 7,500 sq. ft. did 12% better. Stores in the 7,500 to 10,000 sq. ft. group did 27% more. And the stores with more than 10,000 sq. ft. of selling area rung up 53% more sales per checkout than the smaller stores.

Stores grossing between \$4,000 and \$10,000 per week obtained an average sale of \$2,600 per counter per week, he reported. Stores doing more than \$30,000 per week were able to average more than twice that much, or \$5,700 per counter.

### ALLOCATION OF SHELF SPACE MAY BE DETERMINING FACTOR

"While there are certainly many reasons for these wide variations in sales enjoyed by different stores," Nielsen declared, "we believe that one of the most important factors is the method used by the retailer in determining the allocation of shelf space to be devoted to the numerous product groups, by brands within groups, and finally by package sizes of the various brands."

"The progressive retailer must realize the extent to which consumer preferences are shifting—and therefore, the importance of keeping abreast of these changes in order to better allocate his increasingly limited shelf space."

As general trends, Nielsen noted that consumer preference for "convenience" food products, such as soluble coffee, tea bags, cake mixes, and frozen orange juice, is gaining steadily with none of these products yet reaching a saturation point.

### TREND TO LARGER PACKAGES

Consumers are also trending to larger packages, resulting, he believes from the growing practice of one-stop shopping, and using the family car to carry purchases home.

When considering what to buy for the store, it would seem important to select the most popular brands, Nielsen said. But, he warned, leadership within commodities can change several times over the span of only a few years. Of 100 leading brands in 1942, 30 had lost their leadership by 1948, and by 1954, 18 of these 30 had been displaced.

Of the 70 leaders still tops in their fields in 1954, 40 had suffered competitive share losses since 1948.

### FASTER TURNOVER

Nielsen noted that retailers have, over the past 13 years, greatly increased the physical volume of goods moved without a noticeable increase in inventories carried.

"This is positive proof," he said, that through proper selection of merchandise and accurate allocation of shelf space, goods can be made to turn faster with corresponding benefits in lower cost distribution to both retailers and consumers."

### Name 2 To Head Regional Sales for Selmix, Inc.

DETROIT—Thomas J. Riggs, Jr., president of F. L. Jacobs Co., has announced two appointments in the company's beverage dispensing equipment making subsidiary, Selmix, Inc.

George Heppie has been named midwest sales manager for Selmix products, and will make his headquarters in Chicago. Heppie has held several sales executive positions in the vending machine industry.

David K. Brundage, formerly with the fountain sales division of Coca-Cola Co., and Cee & Tee Products Co., has been named Detroit sales representative for Selmix.

## Commercial Refrigeration

### Thomas H. Urdahl Opens New Engineering Offices

WASHINGTON, D. C.—Thomas H. Urdahl has announced the re-establishment of his office here for the practice of professional engineering following his resignation as president and director of engineering for Consultants, Inc.



T. H. Urdahl

Associated with Urdahl will be E. M. Thompson (Rear Admiral U. S. N. Ret.) and W. H. G. Fitzgerald (Commander U. S. N. Ret.).

In May Urdahl expects to move his offices to the Barr building here after 25 years on Jackson Pl.

For Consultants, Inc., Urdahl directed the program of standardization studies for military field refrigerating equipment for the Quartermaster General as a part of the standardization program of the Department of Defense.

During World War II as a captain in the U. S. Naval Reserve, Urdahl was in charge of the Air

Conditioning Section, Bureau of Ships, U. S. Navy, and was directly responsible for standardizing of interchangeability of all Navy heating, ventilating, and air conditioning equipment.

Since then he has been identified with such projects as air conditioning of the liner *United States*, the U. S. Chamber of Commerce building here, and has conducted thermodynamic studies in connection with the aircraft carrier *U.S.S. Saratoga* and the submarine *Nauticus*.

### New Loudon Walk-In Cooler Plant Ready for First Shipments

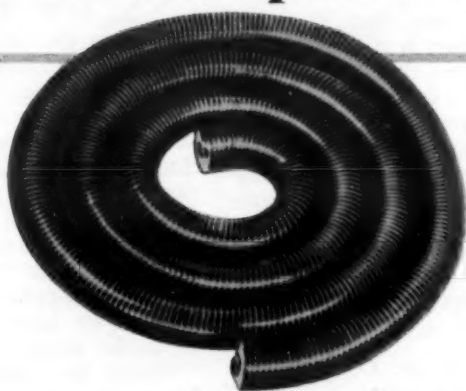
MINNEAPOLIS—Loudon Manufacturing and Sales, Inc. here recently opened a new walk-in cooler plant in Laurel, Miss., R. J. Loudon, president, has announced.

The new plant will cut freight costs to customers in North and South Carolina, Georgia, Florida, Alabama, Mississippi, Tennessee, Louisiana, and Texas, Loudon said.

Loudon said the plant is now ready to ship. Orders will continue to come through the Minneapolis office, he added.

## NOW!

more  
**SURFACE**  
in less space!



Refrigeration and air conditioning manufacturers face a double problem. They must follow the trend to designing smaller units and, at the same time, must step up the capacity of their units.

The best way to achieve this dual purpose (with condensers, heat exchangers and evaporators) is to tube with Wolverine Trufin\*—the integral finned tube. Trufin's extra BTU capacity can often boost performance 2 times over that of plain tube. Fewer tubes are necessary—components go down in size, up in output.

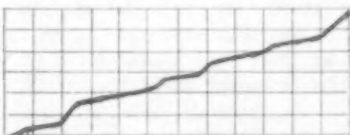
Trufin provides constant fin efficiency, too. Fins are actually part of the tube wall—can't separate because of thermal shock, vibration or pressure changes.

Lead the way to more efficient refrigeration and air conditioning equipment—specify Trufin! Write for a copy of the Trufin Catalog—today! WOLVERINE TUBE, 1413 Central Avenue, Detroit 9, Michigan.

\*REG. U.S. PATENT OFFICE

Wolverine Trufin is available in Canada through the Unifin Tube Co., London, Ontario.

GROWING UP WITH  
THE REFRIGERATION  
INDUSTRY!



**WOLVERINE TUBE**  
DIVISION OF CALUMET & HECLA, INC.  
Manufacturers of Quality-Controlled Tubing  
and Extruded Aluminum Shapes

PLANTS IN DETROIT, MICHIGAN, AND DECATUR, ALABAMA. SALES OFFICES  
IN PRINCIPAL CITIES.

EXPORT DEPARTMENT, 15 EAST 40TH STREET, NEW YORK 18, N. Y.

## HOW!

more  
**SERVICE**  
in less space!



Wolverine Trufin\* not only packs more surface into less space but it has the stamina to provide longer life—increased service—as well.

To combat your special corrosion problems, Trufin is available in a wide range of alloys: copper, copper base alloys, electric-welded steel and aluminum.

A unique example is the bi-metal tube illustrated. It has a finned aluminum exterior and an Admiralty liner. Actually, the liner can be the alloy which will give maximum performance in your particular job.

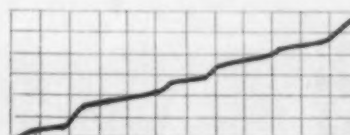
Trufin can be fabricated easily (look at the flat pancake coil above) and it can be quickly and easily substituted for plain tube.

Dollar-saving tip: invest in Trufin today. It'll pay! Write for a copy of the Wolverine Refrigeration Tube Catalog.

\*REG. U.S. PATENT OFFICE

WOLVERINE TUBE, 1413 Central Avenue, Detroit 9, Michigan.

LEADING THE WAY  
WITH RESEARCH!



**WOLVERINE TUBE**  
DIVISION OF CALUMET & HECLA, INC.  
Manufacturers of Quality-Controlled Tubing  
and Extruded Aluminum Shapes

PLANTS IN DETROIT, MICHIGAN, AND DECATUR, ALABAMA. SALES OFFICES  
IN PRINCIPAL CITIES.

EXPORT DEPARTMENT, 15 EAST 40TH STREET, NEW YORK 18, N. Y.



## SPECIALTY SELLING METHODS



WIVES OF SALESMEN watching this "Strip Tease In Reverse" demonstration would heartily approve because it could well mean a new summer wardrobe for them. Model illustrates sartorial build-up awaiting the little woman for the benefit of salesmen of Orgill Brothers & Co. of Memphis, in connection with a new promotion to increase appliance sales. Orgill is distributor of Admiral products in the mid-South. Points earned through sales of refrigerators, home freezers, and electric ranges may be parlayed into summer wardrobes for the salesmen's wives, or into fashion plate splendor for the salesmen themselves. A salesman with as many as 129 points to his credit can convert them into a suit, several pairs of shoes, slacks or sport shirts.

## Smarter Buying, Smarter Selling, Smarter Advertising Seen as Protection for Dealer Profit

GRAND RAPIDS, Mich.—Appliance dealers are going to sell more merchandise in units and dollars during 1955 than ever before, but are going to have more trouble keeping their profit, declared W. A. MacDonough, general manager of distribution and merchandising for Crosley and Bendix Appliances Divs., Avco Mfg. Corp.

MacDonough told Michigan appliance and TV dealers convening here that the formula for protecting their profits lay in smarter buying, smarter advertising, and smarter selling.

He offered them three keys to profit protection.

### HANDLE FEWER BRANDS

First key is concentration on fewer brands. Cutting down the number of brands handled to one or two instead of half a dozen or more allows the dealer to pinpoint his sales emphasis instead of spreading it out, he said.

This has been the strong point of the private brand retailer, he commented, for, instead of asking the customer to take his choice, he can follow a planned program of step-up selling.

Another advantage is concentration of know-how, allowing the salesman to know his product bet-

### Analysis of Typical Dealer by Number of Brands Sold

	Profit and Loss Statement		% Increase
	1952 5 Brands	1953 2 Brands	
Net Sales .....	\$90,765	\$110,733	22
Cost of Goods Sold .....	62,083	76,121	22
Gross Margin .....	28,682	34,612	21
Total Expenses .....	28,587	31,179	9
Net Profit .....	95	3,433	260

	Balance Sheet		% Increase or Decrease
	1952 5 Brands	1953 2 Brands	
<b>Current Assets</b>			
Cash .....	1,584	2,996	\$ 1,412
Accounts Receivable .....	7,762	4,611	-3,151
Inventory .....	27,524	16,593	-10,931
Fixed Assets .....	39,615	37,937	-1,678
Total Assets .....	76,485	62,137	-14,348
<b>Current Liabilities</b>			
Accounts Payable .....	11,761	6,346	-5,415
Notes Payable .....	15,082	6,159	-8,923
Fixed Liabilities .....	25,284	22,794	-2,310
Total Liabilities .....	52,127	35,479	-16,648
Net Worth .....	24,358	26,658	2,300

ter and simplifying sales training.

A third advantage is advertising continuity, which permits the dealer to tie-in closely with the manufacturer's national advertising. Seventy-five per cent of the people who walk into a dealer's store are pre-sold, MacDonough said. Millions of dollars are spent each year to pre-sell them.

Other advantages are merchandising continuity, more effective use of display space for step-up selling, improved relations with suppliers, and better service to customers.

To illustrate the monetary advantages of concentration on fewer brands, MacDonough offered the balance sheet of a typical dealer shown elsewhere on this page.

He pointed out that this dealer, by cutting the number of brands from five to two, increased his sales by 22% and more than tripled his net profit. He reduced both his total assets and total liabilities and increased his net worth by \$2,300.

MacDonough said that 20 years ago, when there were only four major appliances, it was feasible for a dealer to carry many lines. But in the ensuing period, he explained, the number of appliances has increased to 11 and only the largest of retail stores can accommodate a representative sampling of the line. Few, if any, retail salesmen can absorb the necessary product knowledge of five or six brands of these appliances.

### WISE USE OF LOCAL ADVERTISING

The second key to profit protection, he said, is the wise use of local advertising media to get the greatest number of qualified prospects per dollar spent.

"Don't buy advertising just to spend factory money," he urged. "Put news in your advertising, something to get people to buy and to act. The news can be a new product, a new price, a new offer, or anything else that is real news."

He noted that many dealers are profitably using the classified advertising columns and find that the people who respond to these advertisements are the most qualified prospects they get.

### 'SELLING RATHER THAN SHOWING'

The third key to profit protection is selling rather than showing in the store. By this he means hooking up demonstrator appliances so that the salesman can show the prospect what the product will do, how it does it, and why she should buy it.

"Our customers want demonstration, not conversation," he said. "The automobile dealer estimates that one demonstration is worth \$50 off the trade-in figure they must allow. While a demonstration won't be worth \$50 to you, I can guarantee that it will be worth a \$10 or \$20 bill."

Surveys show, MacDonough de-

### Product Sales and a Percentage of Total Appliance Sales

Product	1953	1947	1954
Refrigerators .....	36.7	28.2	19.6
Freezers .....		6.5	6.8
Ranges .....	1.5	9.1	6.2
Automatic Washers .....		9.1	11.7
Conventional Washers .....	12.7	8.5	3.4
Dryers .....		4	3.7
TV .....		2.7	33.9
Radios .....	49.1	29.3	4.3
Air Conditioners .....		6	7.2
Dishwashers .....		1.0	1.1

clared, that a dealer with hooked-up appliances in his store and a representative model of the appliance in his home will sell two or three times as many of that appliance as the dealer who does not use or demonstrate it.

"Because of the physical limitations of the average retail store, it is impossible to have hooked-up demonstrators of five or six brands of the same type of appliance."

A demonstration, he noted, will change a shopper into a prospective customer.

### PROPER SELLING ATMOSPHERE

Another factor in smarter selling is the creation of a better selling atmosphere. Check the noise level in your store, MacDonough advised. Some stores are so noisy that it is a wonder the prospect can hear a sales pitch at all.

Make sure that lighting is good and shows off the appliances to best advantage. Dirty, dusty, and marked up appliances also create a barrier to sales, so keep them clean, he urged.

Check the salesman's attitude. Many times he appears to be on the side of the customer rather than the dealer and knocks the dealer so much that it is a wonder anyone buys from him.

Finally, MacDonough asserted, go out after business. Use the telephone, lead producing advertising, and outside selling to reach people before they become shoppers. These sales will be the most profitable.

### Lee Manages Westinghouse Laundry Equipment

MANSFIELD, Ohio — Appointment of Jack D. Lee as manager of laundry equipment for the Westinghouse Electric Appliance Div. was announced recently by R. J. Sargent, manager of major appliances.

Lee will be responsible for the product development, distribution, advertising, and promotion of Westinghouse "Laundromat" automatic washers and clothes dryers for home and commercial uses. He succeeds J. J. Anderson who was recently appointed manager of portable appliances for Westinghouse.



Jack D. Lee

ADDS PRESTIGE!



INCREASES EFFICIENCY!



GREATER SALES!



AND IT PAYS FOR ITSELF AS YOU PAY FOR IT MONTHLY!



Selling takes time—

**Time** makes selling easy!



To clinch more sales in less time, quote a monthly payment, not a total cash price. Many of your prospects need their working capital and usual lines of credit for current operations. No matter how much they need your equipment, they probably won't sign your order now unless you show them a convenient, practical way to pay. That's the COMMERCIAL CREDIT PLAN way. When can we tell you our story? Phone our office in your city or write COMMERCIAL CREDIT CORP., 14 Light St., Baltimore 2, Maryland.



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A service offered through subsidiaries of Commercial Credit Company, Baltimore... Capital and Surplus over \$175,000,000... offices in principal cities of the United States and Canada.



NEW STREAMLINED LOOK...

More Action!



● Air conditioning and refrigeration—one of America's fastest growing industries—sets a stiff pace. The NEWS, the only weekly newspaper in the industry, has always been out in front.

Now—look for its leadership to be increased. Starting with the July 4th issue, the NEWS will be new in many ways: *faster news service, a streamlined page size that will make reading easier, increased circulation\**, the greatest advertising value in the field.

\*Paid circulation exceeds 20,000.

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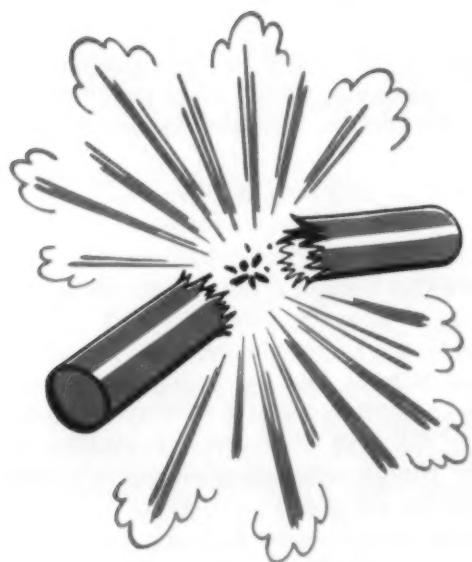
Trim size—11" x 15<sup>3</sup>/<sub>8</sub>".

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5 columns to a page.

Column width—2".

Column depth—14".



IT STARTS ON  
**The Fourth of July**

AIR CONDITIONING  
& REFRIGERATION  
The Newspaper of the Industry

**NEWS**

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The Newspaper That Carries More Advertising By Far Than Any Other Publication In The Field.





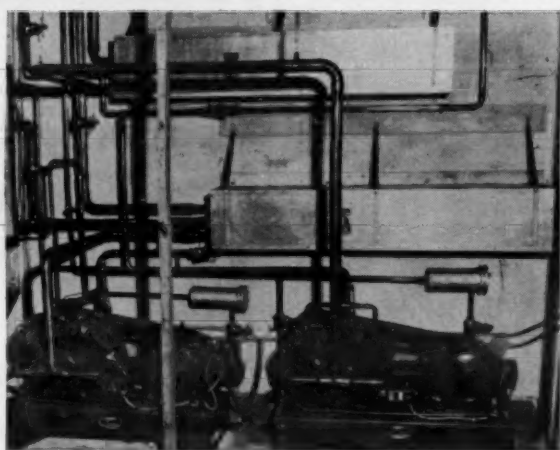
They'll  
Do It  
Every  
Time  
by  
Jimmy  
Hatlo



The tests of a good society are its riches in human personalities and the chances it gives them for self-development. If democracy fails those tests it abandons its own foundations. The French revolutionaries attempted to establish the rights of man on reason alone, and planted the seeds of their own failure. They regarded the rights of the individual as derived from his utility to the state, and thus subordinated the man to the mass. So does socialism, so does communism, so does facism. The only rights of the free citizen then become whatever the majority, or the leader, sees fit to allow him. When this happens, free government has swung full circle, and delivered the rights of man back to their original enemy—arbitrary power in any form which ignores the spark of Zeus of Jehovah in every man.—ALAN VALENTINE in "The Age of Conformity" (Henry Regeery Company).

## Let's Talk COLD TURKEY!

the Lincoln Turkey Farm  
processes 11,000 turkeys  
yearly without spoilage



and the

**KRAMER**

**THERMOBANK**

did it!

THERMOBANK at this Illinois turkey farm is but one of thousands of time-proven applications of Kramer's unequalled automatic defrost system for both large and small installations for temperatures below 32°F.

WRITE FOR BULLETIN R-124

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VOLUME 75, No. 6, SERIAL NO. 1,368, JUNE 6, 1955

## What Are We Going To DO About A-C Standards?

(Concluded from Page 1)

on our industry generally if this opportunity to develop honesty and integrity was allowed to pass into the realm of "just another good idea."

L. H. HIRSCHBACH

The Coleman Co., Inc.  
Wichita 1, Kan.

I do know that the influence of the NEWS and its people on the industry is something to be reckoned with, and that over the period of years I have known of its activities much good has been accomplished.

It occurs to me that you might be able to engineer the kind of "let down your hair" session that would be really helpful in establishing a widespread action of tell the facts as to rating of equipment. I am sure that many of us in the industry would be glad to contribute anonymously to you some of the facts that we have obtained in analyzing every day occurrences. A case built on these facts could not help but startle the industry into activity, especially by one George Taubeneck!

ALWIN B. NEWTON

In brief, ACTION is urged. Well:

Early in June high officials of the most important air conditioning and refrigeration corporations will foregather at The Homestead hotel in Hot Springs, Va.

If they're truly willing to "clean up" our industry, for their own sake, they'll take action there and then to police its waywardness.

When "patent medicine" claims and counterclaims got out of hand, the Congress and the United States legislated Pure Food and Drug laws.

That sort of honesty is needed in the disorganized air conditioning business, lest buyers be scared away in droves. In this connection we quote a third letter, typical of dozens we receive daily:

L. Ginsberg & Sons  
Des Moines 9, Iowa

Editor:

I read your "We Can't Build a Good Business on Dishonesty." I think it is excellent in every way except it does not go far enough. I have been trying to get bids on 110 tons of air conditioning for our building. I have had five companies with their engineers, etc., go over the building and I have received five different specifications in five different bids and if you think it is confusing on window air conditioning, you should try and get some semblance of reason on a big job.

Each of the five bidders have different ideas how it should be done, how many tons it takes, what kind of equipment will be used and five different prices, and now I am so confused as to what is best for me to do I think I will drop the entire matter until I am sure someone knows what he is talking about.

SAUL GINSBERG

It's obvious that air conditioning buyers are crying for help. Unless leading manufacturers get together and agree on methods of policing an honest standard of values, sales will be lost alarmingly.

Can the ARI do something about it? If not, who will bell the cat?





EAGER for knowledge, 122 dealer representatives signed up for the annual school on air conditioning held by S. S. Fretz, Jr., Inc., Chrysler Airtemp distributor in Philadelphia.



"STUDENTS" are just as serious about the Fretz air conditioning course as the instructors are, so Ralph J. Link (left), Airtemp district manager, and H. B. "Howdy" Shaffer, Fretz vice president who runs the school, have to check the homework accurately.

## Wholesale Distributor's Air Conditioning School Builds Volume-Producing Dealer Organization—1

By C. Dale Mericle

PHILADELPHIA — Current trend to wholesale distributorships to reach more effectively expanding markets in air conditioning, both residential and commercial, raises several questions as to how such a distributorship can best serve its dealers and the ultimate consumer.

Newcomers to this field might do well to study the operations of a firm such as S. S. Fretz, Jr., Inc., here, which has been a wholesale distributor of Chrysler Airtemp air conditioning and various appliance lines for quite a number of years.

Although the Fretz company employs various conventional business methods to build up and maintain a volume-producing dealer organization, its most effective tool is probably the Air Conditioning Sales Engineering School which it conducts every year for air conditioning and heating dealers.

### 122 Dealers Signed

Attendance records were broken at this year's school, recently concluded, when 122 dealers signed up for the course.

Classes were held on eight successive Monday nights from 8 to 10 p.m. this year. They began on Jan. 31 and ended March 21.

Sessions are held on the display room floor, which is set up with long tables and chairs for this event.

"Last season school enrollment totaled 82 and we felt that was a sizable figure," comments William Heggie, president of Fretz. "A turnout of 122 dealer representatives this year surprised all of us."

"Fortunately we are equipped to handle the increase, but certainly, if the trend continues, we are going to have to sponsor more than one school a year or secure additional classroom space."

H. B. "Howdy" Shaffer, vice president in charge of Fretz' air conditioning dealer division, is responsible for developing the training program and conducts all the classes.

He benefits from the experience and guidance of Henry McCullough, executive vice president, who is usually on hand Monday nights to talk with dealers before the class starts and during the refreshment period afterwards.

### Handy Tube Bender

Smoothly bends any pipe or tubing 3/8" to 1 1/8" O.D.



Just a twist of the wrist assures perfect, even, right-angle, U and offset bends. Save enough on ONE job to pay for your HANDY BENDER.

See your supply house—or write for free folder today.

HOLSCLOW BROS., INC.

428 N. WILLOW RD.—EVANSVILLE, INDIANA

This is Part One of a two-part article describing the operation of a large wholesale distributorship in Philadelphia. This instalment concerns itself with the air conditioning school which has proved a successful project for the firm.

Assisting Shaffer directly with the sessions are his outside men, William Elliott and James B. Campbell, district managers of the Fretz air conditioning dealer division, and Ralph J. Link, Philadelphia district manager for Airtemp.

### Not a 'Snap' Course

The eight-week school is far from being a "snap" course. A lot of facts and figures on both sales and engineering of commercial and residential air conditioning are thrown at the dealer "students" during the Monday night sessions, and a considerable amount of homework is added to boot.

Perhaps it is the very seriousness of the Fretz school, the fact that the dealers feel they get so much out of it, that accounts for the heavy and regular attendance and obvious success of the venture.

One dealer traveled 100 miles each way for the classes this year, although most of those present were from Philadelphia and nearby counties in both Pennsylvania and New Jersey.

"There's only one explanation for the heavy attendance," believes McCullough, the executive vice president. "We're giving them the mechanism for making money."

That the "students" take the course seriously is immediately evident to the observer sitting in on a class session. There's no problem in getting and holding the dealers' attention, even during the presentations of comparatively "dry" and involved (but practical) engineering data and problems.

"And you should see the 'students' fight over one or two points credit to better their mark on homework," comments Shaffer.

"It proves to us," Heggie says, "that our accounts have found our yearly program valuable; that they do desire to improve their selling, installing, and servicing techniques, and that air conditioning is hitting higher and higher levels."

### 66 Heating Men Among This Year's Students

"Especially significant is the fact that 66 heating men with no previous air conditioning training were 'students' this year," he adds.

There is no charge for the school, but dealers are asked to make a \$10 deposit for materials. Even this is refunded if all eight classes are attended.

Those who complete the course successfully are awarded a "Chrysler Airtemp Air Conditioning Specialist" diploma.

This year's school on air conditioning sales and engineering was the ninth such school Fretz has conducted annually. Somewhat similar schools, however, have

been a Fretz company "trademark" since 1934, according to Shaffer.

Dealer training schools held by Fretz immediately after World War II ran eight hours a day for two weeks with the "students" getting not only classroom instruction but on-the-job training at the drafting board, in the shop, and out in the field with service and installation crews.

Other divisions of the Fretz organization capitalize on the school technique, too. Several appliance

dealers, for example, will spend an entire day with Fretz kitchen planning specialists making an intensive study of complete kitchen planning and installation methods plus sales aspects.

### Course Changes To Meet Current Conditions

"Outline of the air conditioning course is changed every year to meet changing conditions," points out Shaffer. "Last year, for example, we only touched on residential. This year we devoted more time and effort to it."

The fact that the course is changed to keep up to date with changing markets and products of the industry partly accounts for a certain number of dealers signing up as students year after year. There were 10 "repeaters" from the 1954 school in this year's classes, Shaffer said.

"Incidentally, our own secretaries took the 1954 course," Shaffer added. "Some of the girls did better than certain dealers."

"The main point was to acquaint our girls with the terms used by the trade so that when a dealer phoned in for an evaporator, for example, our girls would know exactly what he was talking about."

"Also, getting the girls acquainted with the dealers so that the latter would mean more than just names to them is beneficial to the company, too," Shaffer believes.

As previously indicated, the Fretz school for air conditioning sales engineering covers a lot of

ground and goes into considerable detail in the eight two-hour sessions.

("Always be sure to start and end the sessions on time," Shaffer advises.)

The following outline of the eight "lessons" for each of the classroom sessions illustrates the point:

#### Lesson No. 1

1. History of Airtemp.
2. Fundamentals of air conditioning.
3. Explanation of refrigerant cycle:
  - A. Water-cooled systems.
  - B. Air-cooled systems.
4. Qualifying the prospect.
5. "Rule of thumb" selection methods:
  - A. Commercial air conditioning.
  - B. Residential air conditioning.
  - C. Heating.
5. How to make a proper survey. Homework assignment.

#### Lesson No. 2

Review of Lesson No. 1 homework assignment.

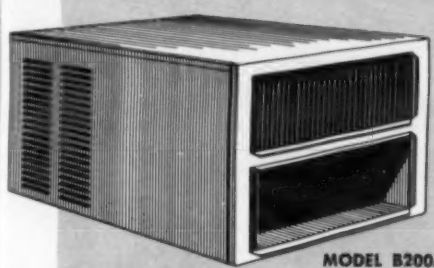
1. General rules for selecting packaged air conditioners for comfort cooling:
  - A. Sizing unit.
  - B. Air circulation.
  - C. Lighting loads.
  - D. Locating unit.
  - E. Air distribution.
  - F. Capacities of units.
  - G. Fresh air requirements.

(Continued on next page)

# Vornado®

**cuts cost of RESIDENTIAL air conditioning in 1/2**

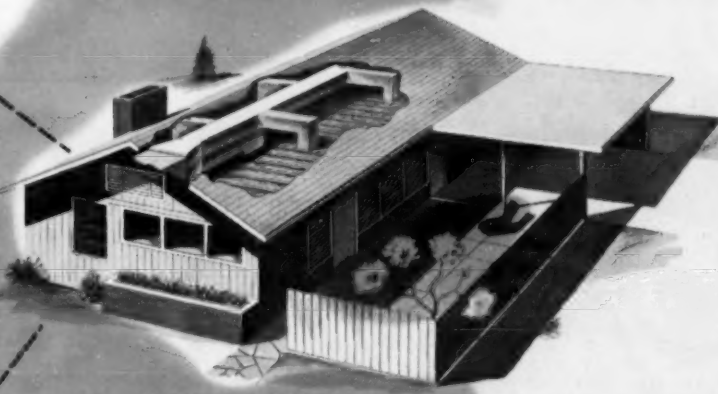
with full dealer margins



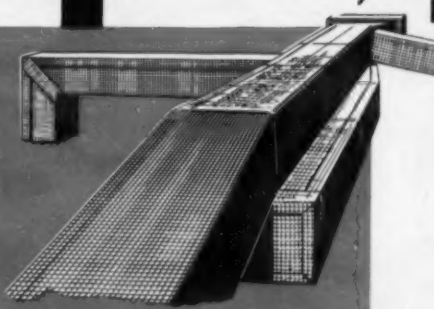
MODEL B200A

### DESIGNED AND ENGINEERED FOR A VAST NEW MARKET

Represents the most advanced engineering principles in air conditioning. Small, compact, lightweight, and economical to operate. Twin system hermetically sealed, carries a five-year guarantee. Thermostatic controls available for completely automatic operation. Vornado Model B200A is designed and engineered for the average small home.



**NEW** PACKAGED UNIT WITH PREFABRICATED DUCT WORK DESIGNED FOR LOW-COST INSTALLATION IN BOTH NEW CONSTRUCTION AND EXISTING HOMES...



### NEW PREFABRICATED FIBERGLAS DUCT WORK FURNISHED AS PART OF PACKAGE FOR ECONOMICAL INSTALLATION

A prefabricated, insulated, patented duct work developed by Vornado engineers which drastically reduces installation costs. Made of thick 3/4" fiberglass for insulation, with outer covering of aluminum foil. Comes in flat, scored sheets that are assembled by taping edge. Fire resistant, protected against moisture.

This dramatically new Vornado Air Conditioner puts the luxurious comfort of entire-home air conditioning within the reach of every home owner. Its low price is the result of new technical achievements by Vornado engineers that have drastically reduced the high costs of air conditioning for the entire home.

Installation is simplified with a new type prefabricated, insulated, patented Vornadoduct that brings cool air into every room of your home.

Vornado's new model is light, compact, and economical to operate. It can be installed in the attic, overhead, or in many cases adapted to other type installations.

See your local distributor today and learn the full facts about this new, sensational Vornado Packaged Air Conditioner that will open new sales potentials for you, with full profit margins.

**QUALIFIED DEALERS ARE BEING FRANCHISED NOW!**  
See Your Distributor Today

Products of **THE O. A. SUTTON CORPORATION**  
Wichita, Kansas  
Specialists in manufacturing comfort cooling appliances



## Wholesaler's Air Conditioning School--

(Continued from preceding page)

2. Internal heat loads, gas and electrical appliances.
3. Heat gain calculations, long form.

Homework assignment.

### Lesson No. 3

Review of Lesson No. 2 homework assignment.

1. Heat gain calculations (continued from Lesson No. 2).
2. Heat loss calculations.
3. Equipment selection and design:

- A. Residential.
- B. Commercial.

Homework assignment.

### Lesson No. 4

Review of Lesson No. 3 homework assignment.

1. Design and application of commercial air conditioning systems (water cooled):
- A. Grille selection.
  - B. Ductwork sizing.
  - C. Water and drain piping.
  - D. Electrical.
2. Installation instructions and cost (commercial).
  3. Operating costs (water-cooled equipment).

Homework assignment.

### Lesson No. 5

Review of Lesson No. 4 homework assignment.

1. Design and application of residential air conditioning systems (air cooled):

- A. Air distribution.
- B. Ductwork sizing.
- C. Refrigerant piping.
- D. Electrical.

2. Selection of proper heating unit for year-round air conditioning.

3. Installation instructions and costs (residential).

4. Operating costs, air cooled vs. water cooled.

Homework assignment.

### Lesson No. 6

Review of Lesson No. 5 homework assignment.

1. Cooling towers:

- A. Application.
- B. Pipe sizing.
- C. Wiring diagrams.
- D. Foundation requirements.

2. Special applications.

3. Pricing the job, cost-estimating work sheets.

4. How to use the Chrysler Airtemp proposal form.

- A. Commercial packaged air conditioners.
- B. Residential heating and air conditioning.

Homework assignment.

### Lesson No. 7

Review of Lesson No. 6 homework assignment.

1. Review of all equipment specification sheets.
2. Chrysler Airtemp advertising program:

- A. National advertising.
  - B. Local advertising.
3. Builder program.
- A. Custom homes.
  - B. Project homes.
4. How to use direct-by-mail advertising.
  5. "Know your product":
- A. Commercial.
  - B. Residential year-round air conditioning.
  - C. Heating.

### Lesson No. 8

1. Chrysler Airtemp line of room air conditioners:

- A. Conventional models.
- B. Casement models.

2. Question and answer period.
3. Distribution of diplomas and awards to graduates.
4. Graduation and presentation of awards for highest grades.

As can be seen from the preceding outline, the course used at the Fretz school goes into considerable detail.

The course outline as well as the eight individual lessons are prepared by Shaffer himself, who draws upon material from manufacturers which Fretz represents, especially Chrysler Airtemp.

For each lesson each student receives a bound collection of printed and mimeographed material pertaining to the subjects discussed. In effect, the material for all eight lessons comprises a practical textbook more than 4 in. thick.

For example, the material given



## AIR CONDITIONING

each student for Lesson No. 6 includes:

A two-page outline of the lesson, nine pages devoted to cooling towers, three pages of electrical data on Airtemp packaged conditioners, a six-page Airtemp proposal form, similar proposal form devised by Fretz, 26 pages devoted to electric blast heaters for air conditioners, installation instruction booklets on several Airtemp units, a lesson in the Airtemp sales training correspondence course, and the homework assignment for that lesson.

The homework is no cinch, either. Although some of the questions require a simple yes or no answer, others take a considerable amount of time and effort.

### Some of the Homework Problems

Here are a few of the latter:

"Make an accurate survey of the first floor and basement of your residence on graph paper. Include all items on check list."

"The top floor of an office building has 1,250-sq. ft. floor area and a flat roof. How many tons would you estimate were required to summer air condition the space?"

"Using a 5-ton unit with supply ductwork to air condition a store 20 ft. wide and 70 ft. long, how many c.f.m. would you discharge out the front grille to obtain satisfactory results? Show calculations."

### Sales and Business Principles Included In Course

The questions asked in the homework lessons are not limited to the technical side of the business although there is necessarily considerable emphasis on this phase.

Many questions are aimed at good business practices and sales methods, and others are designed to bring out selling points and features of the Airtemp line.

Fundamentally, of course, ultimate purpose of the school is to encourage more dealers to make more and better installations of Airtemp equipment obtained through the Fretz organization with profit to all concerned.

The homework papers are examined and graded by Shaffer himself, usually assisted by Ralph Link of Airtemp. And, as indicated previously, the "students" take their homework very seriously, sometimes arguing with Shaffer that their score should be a few points higher.

Shaffer and other Fretz executives can appreciate the dealers' intense interest, for the organization's air conditioning division is headed up by former engineers and servicemen. That includes McCullough, the executive vice president; Shaffer, and Elliott and Campbell, the two district managers.

"Both of these men still carry a set of tools and gauges in their cars and can help a dealer on a service problem," Shaffer says.

Even such an official as F. B. Millham, treasurer, has a technical background. A professional engineer, Millham in years past served as service and installation manager for Fretz.

Admittedly, the annual school on air conditioning is a most effective sales promotion effort, but Fretz also employs other more conventional ideas with success.

What is believed to be the largest and most successful air conditioning dealer meeting ever held in the Philadelphia area was staged by Fretz last December to kick-off the 1955 selling season.

More than 260 dealers from the Delaware Valley and South Jersey sales districts, architects, FHA, VA, Airtemp officials, and press representatives attended the seven-hour affair held at the Drake hotel in Philadelphia starting at 2 o'clock in mid-December.

"We feel that this meeting shortened by at least six months the time that normally would be required to establish a well informed, effective dealer organization," comments Heggie, Fretz president.

### Air Conditioning Losing Many Seasonal Aspects

"Air conditioning, losing many of its seasonal aspects, has today become an important year-round business. Therefore, it is imperative for maximum results that a dealer team be welded and sales plans formulated as early in the year as possible," he adds.

The entire air conditioning and heating picture was covered during the sales meeting, activities being enlivened by a master of ceremonies, a Fretz employee in the guise of Groucho Marx. There was also considerable interest in the big prize of the evening—a 3-ton Airtemp conditioner.

Contributing substantially to the success of the sales meeting was advance planning backed up by extensive promotion.

A teaser campaign titled "There's Money In the Air" was initiated three weeks prior to the meeting. Two mailings, a week apart, advised dealers to mark their schedules for the Dec. 16 event.

These interest "generators" were followed by special invitations with attached reply cards listing complete information.

(To Be Continued)

JUST ASK US!

Turn to "What's New" Page for useful information on new products.

## Your Westinghouse Distributor Increases Your Profit with ... A Complete Air Conditioning Sales Promotion Package

Mr. Thomas F. Joyce, President of Raymond Rosen & Co., Inc., Philadelphia, says: "We find that Westinghouse national advertising, plus complete sales promotion back-up, helps our 40 Westinghouse Air Conditioning dealers locate prospects—and make more sales."

### Helps you locate prospects ... close sales

Your Westinghouse distributor can supply you with the most complete promotion package in the industry. And all of it has been designed to help you locate potential air conditioning buyers and close Westinghouse sales.

It includes: Local Identification and Display Material...Telephone Directory Listings...Truck Painting Package...Newspaper Advertising...Direct Mail...Radio and Television Advertising...Catalog and Data Sheets.

National advertising in SATURDAY

EVENING POST, BETTER HOMES & GARDENS, TIME, BUSINESS WEEK, HOUSE BEAUTIFUL, AMERICAN HOME, and SMALL HOMES GUIDE, plus many more, tells everybody you're the man to see for air conditioning.

Betty Furness sells for you on TV, too (Studio One Summer Theatre)—to help make Westinghouse a household name.

Mail the attached coupon for the most complete profit-building plan ever offered!

YOU CAN BE SURE...IF IT'S **Westinghouse**

J-80488

### MAIL THIS TODAY

Westinghouse Air Conditioning Dept. R-5  
Box 510, Staunton, Virginia

I want the complete story on the 1955 Westinghouse Air Conditioning Line...and Sales Promotion Package—"Invitation to Leadership."

- ☐ I am not yet in the air conditioning business  
☐ I am now an air conditioning dealer  
☐ I now handle the following lines: .....

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## Manager - Engineering Room Air Conditioners

Strong, progressive, well-established Midwest manufacturer of refrigeration appliances and components needs highly qualified engineer to head up and have complete charge of design and development and product engineering of room air conditioners. Must have good basic engineering background with well-rounded refrigeration experience. Interested in men now making upwards of \$15,000. Liberal bonus and fringe benefits. Replies confidential. Our employees know of this opening. Send detailed resume and salary progression.

BOX A5255, AIR CONDITIONING & REFRIGERATION NEWS

IDEAL  
**Speed-Freeze**  
PRODUCTS

BEVERAGE COOLERS AND  
INSTANTANEOUS DRAFT  
BEER COOLERS.  
(With Refrigerated Faucets)

WRITE  
**IDEAL COOLER CORPORATION**  
2953 EASTON AVE. • ST. LOUIS 8, MO.



## ASRE Program--

(Concluded from Page 1)

lator Co.; D. V. Petrone, president, Typhoon Air Conditioning Co., Inc.; and I. P. Sharpe, manager, Product Planning, Home Heating & Cooling Dept., General Electric Co.

### DOMESTIC CONFERENCE

"Aluminum Evaporators" is the subject of the domestic refrigerator engineering conference to be held Tuesday morning.

Speaking at this conference will be John Blomquist, Reynolds Metals Co.; Mason Randel, Western Brass Div., Olin Mathieson Corp.; E. G. Beck, Jr., The Stolle Corp.; R. L. Hadley, Metallurgical and Ceramics Lab., General Electric Co.; and R. B. Vanden Berg, Process Development Lab., Aluminum Co. of America.

The six forums will be held Tuesday afternoon. Subjects and moderators are:

"Rating of Cooling Towers," W. J. Donovan; "Designation of Refrigerants," A. H. Lawrence, Jr., E. I. du Pont de Nemours & Co., Inc.; "Distribution of Frozen Foods," H. O. Kirkpatrick, Union Asbestos & Rubber Co.; "Emergency Refrigeration During Disaster Periods," J. H. Spence, Hussmann Refrigeration Co.; "Natural Convection Condensers of Self-Contained Products," F. G. Peck, Ranney Refrigerator Co.; and "Corrosion Preventing Finishes," R. A. Line, Hussmann Refrigerator Co.

### FIRST TECHNICAL SESSION

Presenting papers at the first technical session Monday morning will be Willis Merle Carter, professor of machine design, University of Kentucky; H. F. Lehmkuhl, Seeger Refrigerator Co.; and W. R. Briskin, manager, Advanced Engineering, General Electric Co. Prof. Carter will discuss "The Injection Refrigeration Cycle," Lehmkuhl will cover "Characteristics and Performance of Rotary Compressors," and Briskin will talk on "Moisture Migration in Hermetic Refrigeration Systems as Measured Under Varied Conditions."

### SECOND SESSION

On the program for the second technical session Tuesday morning are these papers:

"Physiological Effects of Environment of Domestic Animals," H. L. Garver, Department of Agriculture; "Insulation in Refrigerated Transportation Body Design," S. W. Eby and R. L. Collier, Armstrong Cork Co.; "Moisture Problems in Low Temperature Railroad Transportation," T. M. Elfving, president, Isoflex Corp.; "Rate of Solidification," D. L. Cochran, Stanford University.

### THIRD SESSION

Opening the third technical session Wednesday morning will be presentation of a paper by R. C. McHarness, research supervisor, and Dr. B. J. Eiseman, Jr., research chemist, du Pont, and Prof. J. J. Martin, University of Michigan, on "New Thermodynamic Properties of Freon-12."

Also programmed are: "Vibration and Vibration Analysis of Commercial Units," C. A. Hathaway, chief engineer, and K. A. Merz, engineer in charge, Product Development, Torrington Mfg. Co., and "Some Practical Aspects of the Dielectric Properties of Refrigerants," D. A. Beacham and R. T. Divers, Central Engineers Staff, Materials Standards Dept., Carrier Corp.

Other activities planned for the meeting are sightseeing trips, visits to Milwaukee breweries, the annual golf tournament Tuesday afternoon, an open house Sunday evening, the welcome luncheon Monday noon with Paul Pratt, assistant to the president of Borden Co. as speaker, and a cocktail party and dinner-dance Tuesday evening.

## Coleman Gas-Powered Conditioner--

(Concluded from Page 1)

1957 there will be sharply increased production."

Many executives of leading gas utilities were given an introduction to the latest Coleman test model gas motor system at a conference in Wichita, April 29-30.

### UTILITY COOPERATION CITED

As they did a year ago with an earlier experimental unit, utilities will assist Coleman Co. in coming field test work. The company credits utility cooperation with a material advance in the date by which production units will be on the market.

In addition to examination and discussion of the gas motor model, the executives attending the conference were briefed on progress in research on three other gas air conditioning cycles.

These cycles and the independent organizations assisting Coleman Co. in research work on them are Arthur D. Little, Inc. (Massachusetts Institute of Technology), Cambridge, Mass., Binary jet system; Institute of Gas Technology, Chicago, open absorption system; and Texas College of Arts & Industries, Kingsville, Texas, adsorption system.

Coleman has pointed out that research on these three cycles will continue regardless of the success achieved with the gas motor system. It is possible, the company said, that eventually it will produce more than one type of system for sale.

### TEST MODEL EQUIPMENT

The present test model consists of a remote condensing unit, including power unit, compressor, evaporative condensers, self-contained refrigerant circuit, and a liquid chiller "of greatly advanced design."

"All refrigerant lines are sealed into the condensing unit at the factory," it was stated. "Because lines between the remote unit and the indoor cooling coil carry only a low-pressure liquid, plumbing skills are sufficient for installation."

"Indoor equipment would be essentially the same as in the present Coleman 'Blend-Air conditioning' electric systems. The only difference would be in the cooling coils, which would be replaced with coils adapted to circulating the chilled liquid instead of a refrigerant."

"The coil used would be, optionally, an inverted-V type unit fitted in the furnace plenum and using the furnace blower or an independent vertical cooler with its own blower. A combination of the two would best suit many installations."

"Supply ducts would be either Coleman's present 3½-in. diameter Blend-Air tubes, which fit inside standard wall spaces without special construction, or conventional ducts. Coleman 'blender' outlets or standard registers would be used."

### OTHER HIGHLIGHTS

The information that Mr. Coleman had ready for release at New Orleans included these descriptive highlights of the gas-energized systems:

"1. The evaporative condenser would operate on the wet-bulb temperature of the air—which rarely, if ever, rises above 80° F., regardless of dry-bulb temperature. This unit is frequently 50 to 60% more efficient than an air-cooled condenser of the dry-bulb type."

"2. The direct drive starter would run on 115-volt a.c. It would simply be plugged into an ordinary household convenience outlet."

"3. Initial installed cost probably would be slightly above the cost of an electrical system of similar capacity—but extremely low operating cost would more than compensate for this. Average operating cost would be only about two thirds of the operating cost of an electrical unit."

"4. Noise is no problem. The unit's enclosure is acoustically treated. The noise level compares favorably with present electric air conditioning equipment."

"5. No special equipment or skills are required to service the power unit."

"6. The compressor is coupled directly to the engine shaft. No belts or pulleys are used."

"7. The goal in motor life—which is believed to have been reached—is a unit that will run for 10,000 hours without major overhauling. This is equal to five full cooling seasons in Houston or New Orleans—and considerably more than five seasons in regions farther north."

### REDUCTION OF SERVICE

"8. In regard to servicing, Coleman expects to eliminate all necessity for service during a cooling season up to 2,000 hours long. Spark plug life has already been extended to 2,500 hours or more, and distributor point life is up to approximately 2,200 hours. The unit incorporates a large reservoir for lubricating oil; fill the tank once and it will not require any more oil for an entire season."

Work on the gas motor system is being done by an inter-company team. In addition to Coleman, the team consists of D. W. Onan & Sons, power plant manufacturer; Minneapolis-Honeywell, control

manufacturer; and Copeland Refrigeration Corp., manufacturer of the compressor used.

"Management objectives" set up by Coleman Co. to guide its engineers in research are:

"1. That the original cost installed should be competitive."

"2. That the operating cost should be competitive."

"3. That service requirements should be competitive."

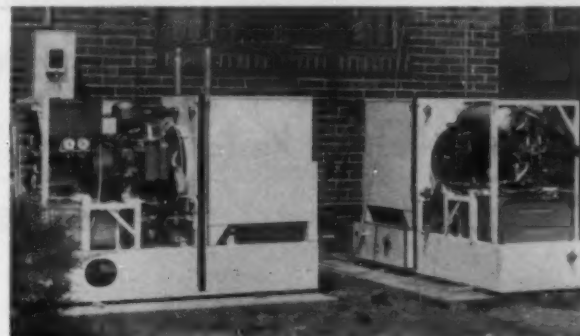
Mr. Coleman's explanation of the reason for his company's research program is that the "search for a practical, economical system of gas-powered summer air conditioning for the home stems from the spectacular sale of electric air conditioning equipment, which has built a summer peak load condition on the electric utility lines as unsatisfactory to them as the winter heating peak load is to the gas utilities."

"Neither of these major indus-

tries wishes to continue indefinitely with its respective troublesome load peak. The electric industry needs an additional winter heating load and the gas industry needs the additional summer load that gas air conditioning would provide."

"The electrical industry is mobilizing all the power at its command to take on the year-round climate control market through the medium of the electric-powered heat pump and electric resistance heating. As this project gains momentum, the gas heating load is being placed in increasing jeopardy."

"In view of this situation, a system of gas-energized air conditioning to augment the gas heating load is urgently needed to protect the gas industry's favorable position in the residential heating market and to provide a more profitable year-round operation for gas utilities."



TWO REMOTE Coleman gas air conditioning units stand in place outside test house. Photo was taken at test installation in large house, where two units were used for zone control. Insulated, weatherproof cabinet panels were off at the time.

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NO BRAZING!

NO TUBE CUTTER!  
NO SAWING!



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ALCO THERMO VALVES

without  
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Loosen cap screws, raise power element, lift out the cage... that's all! Alco come-apart construction gives instant access to all working parts... for cleaning, repair or capacity change.

2½-inch headroom is sufficient space for installation and servicing!

Save money—save servicetime—install ALCO "T" Series Thermo Valves!

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For all temperature ranges—all operating conditions.

.5 ton—50 tons "F12".

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## What Was New At the National Restaurant Show



53-CU. FT. SLIDING DOOR REACH-IN for dairy products and beverages is shown to Gordon G. Brown, Toronto manufacturers' representative (l.), by Hugh E. Cooper, general sales manager of McCray Refrigerator Co. KEY NO. E-610.



DOORS SLIDE FROM THE TOP to eliminate the dirt-catching bottom track on Stanley Knight Corp.'s new refrigerated display case. John Silander, sales manager (l.), explains to Ed Rucker, operator of the Inn the Moo'd, teen-ager night club in Rochester, Minn. KEY NO. E-611.



A SMALL PORTION OF THE 1,000 lbs. per day of ice flakes produced by the Carrier air-cooled "Flakemaster" ice maker is scooped out by Ken Vaughn of Charlotte, N. C., while Jack Davies of Dallas looks on. KEY NO. E-612.



ENLARGED EVAPORATOR COILS PERMITTING BUILD-UP of a large ice bank enables Carbonic Dispenser's deluxe "Soda-master" to dispense 3,570 6-oz. drinks in eight hours, Frank Welty, vice president, tells Mrs. Jack Kelly of Minneapolis. KEY NO. E-613.



A COMPLETE MILK SHAKE OPERATION that will produce 240 to 350 shakes an hour in three flavors is tested by Sam Kreisman of Montreal, Canada (l.), and Robert W. Ruggles, Mills Industries, Inc. distributor in Glen Falls, N. Y., in the Mills booth. The machine is called a "Milkshake." KEY NO. E-614.



## Most Modern Pickup You Can Buy!

Nimble like you want. Rugged like you need. Thrifty like no other. And it's got styling that's so distinctively different that it becomes a profitable advertisement - on - wheels, just parked or on the go.

**New High-Voltage Engines.** Chevrolet's new Task-Force engines are all sparked by a new 12-volt electrical system.

And what a difference this big double punch makes! You'll notice it the first time you turn the key. For now you get those sure, quick, economical starts—even on the coldest days. Next, you'll feel the big new wallop of action you get in every mile you go. Chevrolet's high-voltage power goes to work the instant your foot gives the command to the throttle!

You'll agree there's nothing like it, especially when you see how much on-the-go economy there is in these new Task-Force engines. For when you put High-Voltage and High-Compression together, as Chevrolet does this year, you've got the savingest engines in the stop-and-

go field. And with Chevrolet's Truck Hydra-Matic\*, you get a still bigger money's-worth in time saved.

**On and on—completely new.** Talk about a smoother load-steady ride—here it is! For with Chevrolet's new front and rear suspension systems, driver and load have it far easier under all driving conditions.

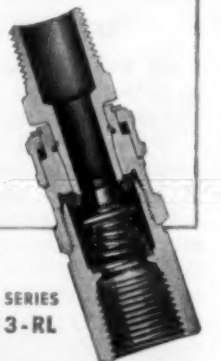
Frames are new, more rigid, with ladder-type construction and full-length parallel side members. There's new High-Level ventilation for better air circulation in all kinds of weather; new linkage-type Power Steering\* for added driving ease and safety; new Power Brakes\* that stop with up to one-third less pedal pressure, and do it right now!

**Don't stop here.** The rest of the "all-new" story is equally great. So see your Chevrolet dealer. Be sure to ask about his trade-in deal too. Makes good listening for buying today. . . Chevrolet Division of General Motors, Detroit 2, Michigan.

\*Optional at extra cost. Truck Hydra-Matic on 3/4-, 3/4-, and 1-ton models. Power Brakes standard on 2-ton models, optional on all others. Power Steering available on all except Forward-Control models.

# NEW CHEVROLET Task-Force TRUCKS

## Everything You Want in a Quick-Connective Pneumatic Coupling



## HANSEN RING-LOCK COUPLING

On any job requiring 3/4" to 1/8" connections—from the air line to the air tool—this single size Hansen Ring-Lock Coupling—with completely interchangeable Sockets and Plugs—does it all—makes it easy to keep stock of parts in balance—holds inventories to a minimum.

To connect, you merely push the Plug into Socket. To disconnect, just turn the sleeve. When Coupling is connected, a locking ring in Socket enters groove in Plug, provides positive lock and insures tight fit. Sockets with aluminum bodies are available for use with small hand-operated air tools.



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QUICK CONNECTIVE FLUID LINE COUPLINGS

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## Restaurant & Bar Equipment



A WATER-COOLED HERMETIC COMPRESSOR powers this self-contained cafeteria water cooler. R. M. Nelson, Temprite Products Corp. sales engineer (r.), informs Joseph Roccaforte, Chicago drive-in operator. KEY NO. E-615.



WALL-HANGING FREEZER to dispense and store prepared frozen foods takes no floor space and is completely self-contained. "Professor" J. M. Kane, president of National Cooler Corp. (r.), informs Paul R. Feller, Detroit equipment dealer. KEY NO. E-617.



NEW WALL-MOUNTED REFRIGERATED display case with mirrors is exhibited by Fred C. Krasner, sales manager of Lern, Inc. KEY NO. E-619.



POINTING TO THE DIAL by which the operator can regulate the size of the ice cubes he wants from the new "Lipman Iceboy" ice maker is Roger Burns, northwestern divisional manager for the Lipman Refrigeration Div. of Yates-American Machine Co. (l.). F. B. Demes, midwest divisional manager, holds two different size cubes produced by the machine. KEY NO. E-6110.



DRINKS ARE DRY COOLED RIGHT TO THE POINT of dispensing in Bastian-Blessing Co.'s new "Coldpoint" drink dispenser. L. N. Lucas (r.), vice president and sales manager, explains to James J. Gavigan, the company's New York City distributor. KEY NO. E-6111.



AUTOMATIC DRAW AND AUTOMATIC MIX VALVE are features of the model 10P "Electro-Freeze" soft ice cream dispenser demonstrated by Charles H. Erickson, president of the Port Morris Machine & Tool Works. A gauge on the refrigerated hopper shows how much mix it contains. KEY NO. E-618.



DOUBLE LAYER ICE SLAB MECHANISM boosts the capacity of the Frigidaire ice maker to 450 lbs. per day. R. A. Kramer, zone sales manager for Frigidaire's commercial and air conditioning division (l.), tells T. O. Adams, Indianapolis restaurateur. KEY NO. E-6112.

On these two pages are pictured new products shown at the National Restaurant Show in Chicago. For further details please use the "Information Center" blank on page 24 and refer to the key number at the end of the cutline with each picture. Additional pictures will appear in a future issue. Other pictures were published in the issues of May 23 and 30.

### Do you like money?



### You can make lots of it selling the Carrier Icemaker

Just like Phil Conrad of Hartsville, Pa.

"I sold 31 Carrier Icemakers in 40 days"

Just like Joe Dailey of Omaha, Nebraska

"Prospects are around every corner and on every page of the telephone book"

Just like Doug Moat of Phoenix, Arizona

"My best salesmen are present Carrier owners"

### You make lots of money with Carrier because it's the icemaker with the most to sell

A proved savings story... 12 models or sizes... models for flakes, cubes, or cubes-and-crushed... self-cleaning action... space-saving design... plus Carrier quality throughout.

### FIND OUT HOW—NOW

Get the complete, reason-why story. Mail the coupon below, today.

## Carrier

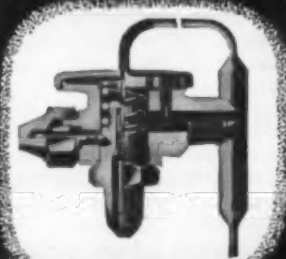
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SEE YOUR WHOLESALER FOR LOW, LOW PRICE!

Assure Lasting Precision Refrigerant Control...

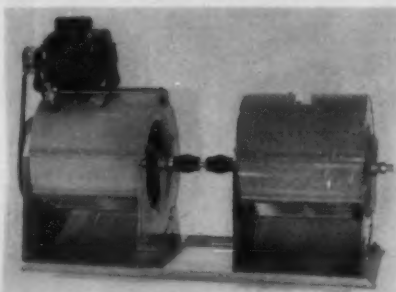
KOLDEX INTERNATIONAL, INC. • 1150 BROADWAY, NEW YORK 1, N. Y.



## What's New

When requesting further information on new products, please use "Information Center" form.

### Dual Blower Increases Air Flow with Same Height



KEY NO. E-6124

DAYTON—A new dual "Econo-Pak" blower for warm air heating and air conditioning installations where it is impossible to mount one large blower but is necessary to have increased air flow, was announced recently by the Lau Blower Co. here.

By joining two standard Econo-Pak blowers together, the company said, air flow can be increased within the same height but with greater width.

Housing supports and hardware are furnished by Lau. Since the purchaser can direct the blowers' air flow at any angle of discharge, he adds angle rails, two flexible couplings, and make up shaft as he wishes, the company explained.

Thus, he can produce his own

custom installation using standard parts.

The manufacturer claims that the Econo-Pak fits about 95% of blower requirements in the domestic heating and air conditioning fields.

### Small Pumps Designed for Commercial Applications

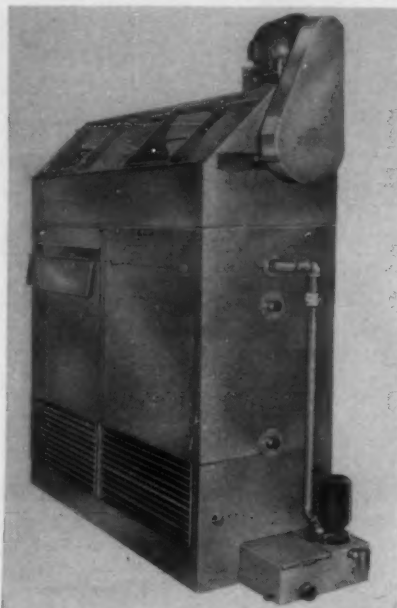
KEY NO. E-6125

CHICAGO—A small, compact pump designed for steady flow of liquids of light viscosity has been introduced by Graymills Corp. here.



Series H-3000 operates with low liquid level without splashing, has a shaded-pole motor fully enclosed and fan cooled, and has no mechanical starting switch, according to Graymills.

Pumps are specifically designed for ice makers, milk coolers, display cabinets, and coolant systems.



### Evaporative Condenser Has Rugged Construction

KEY NO. E-6126

CHICAGO—A heavy duty evaporative condenser designed to meet requirements of meat packers has been introduced by Industrial Mfg. & Engineering Co.

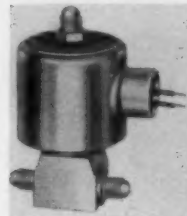
The "Imeco" unit, which is available from 5 to 100 tons, has large capacity blower wheels, parts have been hot dip galvanized to prevent corrosion, and sides are removable to permit easy access to coil.

Stainless steel door hinges assure ease in opening, according to the company.

### New Sporlan 172 Control Has 1/4-In. SAE Connections

KEY NO. E-6127

ST. LOUIS—In response to field requests, Sporlan Valve Co. has modified its Type 171 solenoid pilot control to provide all 1/4-in. SAE male flare connections.

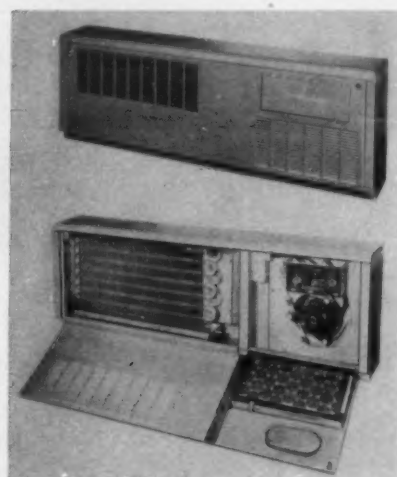


So that it may be distinguished more easily from the obsolete Type 171, the new control is designated

as the Type 172.

"This control is used in place of large capacity solenoid valves for positive shut-off of liquid lines and is available for 'Freon-12,' 'Freon-22,' 'Carrene-7,' and methyl chloride," the company said.

"Any number of thermostatic expansion valves, as large as those nominally rated at 50 tons on 'Freon-12,' may be connected to one control, thus simultaneously controlling the action of one valve or the entire plant."



### Baseboard Unit Designed for Multi-Room Use

KEY NO. E-6129

BROOKLYN—A new baseboard "Dual Conditioner," suitable for multi-room installations, has been introduced by Circle-Air Industries Inc.

The Dual Conditioner operates on the same piping circuit used for heating. It requires no ducts, and is the only type of conditioner approved by law for use in fireproof buildings in all states, the company claims.

Each unit is its own zone control. The system will not be thrown out of balance if some units are shut off, the company said.

A 10 point c.f.m. control is standard on all units. Optional built-in thermostat is available, or each room or area can be supplied with thermostat.

A choice of UL approved models are available to meet varying capacity needs, cooling 5,400 to 7,900 B.t.u., heating 10,400 to 16,000 B.t.u.

To complete the year-round Dual Conditioner system, a "Circle-Air" water chiller of the correct capacity is supplied to operate in conjunction with the hot water boiler.

For cooling and ventilation only, the unit can be connected to a standard refrigerating condensing unit.

### Combination Unit Offers Hot, Cold Beverages

KEY NO. E-6128

NEW YORK CITY—A combination hot and cold drink dispenser has been introduced by Apco, Inc. here.



The unit, called the Coffee-Soda-Shoppe serves hot coffee with or without cream and sugar, hot chocolate, and three carbonated cold drinks from three syrup tanks.

The combination unit has a 1,000-cup capacity, 1,400-drink

syrup capacity, 900 hot coffee, and 200 hot chocolate capacity.



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**DYCON**®

the MODERN AIR FILTER

for **WARM AIR FURNACES  
AIR CONDITIONERS  
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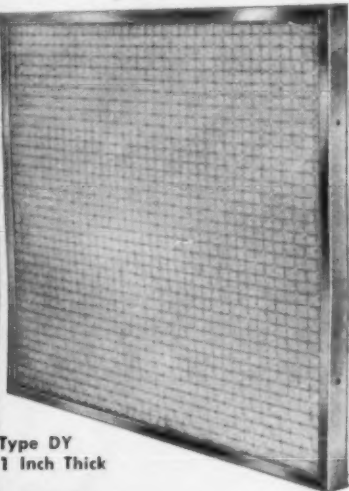
**RESIDENTIAL • COMMERCIAL • INDUSTRIAL**

**PERMANENT—QUICKLY AND EASILY CLEANED**

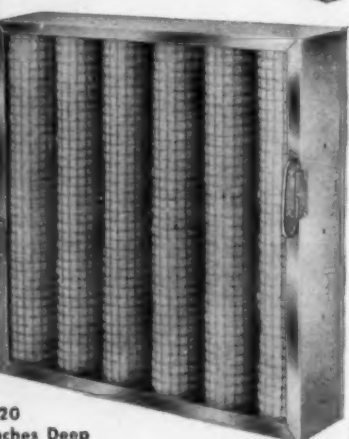
Amazing new plastic dry-type media in rustproof aluminum frame efficiently traps dirt by accumulated static charge. Quickly and easily rinsed clean with cold running water—and immediately ready for re-use, good as new, time after time, year after year!

**REAL PROFITMAKER:**

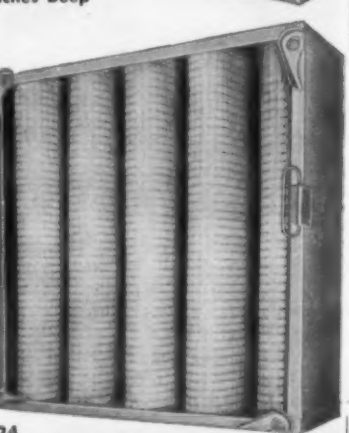
Greater sale price of this permanent-type filter—and its attractive mark-up—will put more money in your pockets. National advertising and promotion supports your sales. Contact your Continental representative, or write direct, for the profitable details.



Type DY  
1 Inch Thick



CA-20  
4 Inches Deep



CA-24  
8 Inches Deep



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**CONTINENTAL**  
AIR FILTERS Inc.

## Information Center

For more information on What's New products, current literature and catalogs available, equipment advertised in AIR CONDITIONING & REFRIGERATION NEWS use Key Numbers where designated or specify products advertised and we'll see that you receive this information promptly.

### What's New or Current Literature Available

Key No. ....	Key No. ....
Key No. ....	Key No. ....
Key No. ....	Key No. ....
Key No. ....	Key No. ....

### Products Advertised

(list name, page, and issue date)

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## What's New (Con't)

### M-H Introduces 'Golden Circle' Residential Thermostat



KEY NO. E-6113

MINNEAPOLIS—The "Golden Circle" now bows in as a refinement of the "Round Look" in home thermostats—"and with technological advances to match the step-ahead in stylishness."

A completely redesigned and improved electronic home temperature control system incorporating a new electronic thermostat—called the Golden Circle—and other features is announced by Minneapolis-Honeywell Regulator Co.

The new thermostat is about the size of a fine gold pocketwatch. It carries forward into "Electronic Moduflow" systems the round design introduced by Honeywell in 1953 in its standard home thermostat.

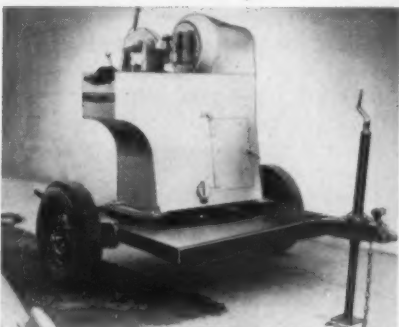
The Golden Circle is a slender gold disc 2 3/4 in. in diameter. It is mounted in the conventional thermostat location and works with an outdoor temperature sensing element and a "brain" control center to adjust indoor comfort scientifically according to outdoor weather changes.

The control center operates on a 24-volt circuit and is supplied with a transformer and 15 ft. of

cable with a remote terminal block to make it possible to mount the "brain" unit wherever desired.

Two models of the new thermostat and three different control centers are available. All were styled by industrial designer Henry Dreyfuss.

Two of the systems provide for automatic night temperature setback and include an attractive electric clock which is mounted on the face of the control center.



### Pipe Threading, Cutting Unit Mounted on Trailer

KEY NO. E-6114

LOS ANGELES—Gaines-Collins, manufacturer of automatic pipe threading and cutting machines, has announced a new line of mobile pipe shops. First of the line to be introduced is a trailer, specially designed for the company's "Thred-O-Matic 44," to permit on the job cutting and threading of pipe.

Trailer can be hitched onto a car or truck and has enough room to accommodate a generator to operate the Thred-O-Matic. By unfastening four bolts, wheels of the trailer move forward on an eccentric axle and trailer platform is lowered to the ground to permit operation of the machine.

This feature also eliminates the

need for removing the machine from the trailer in doing field work.

Trailer is priced at \$295, including hitch; Thred-O-Matic is \$2,754, including 10 die heads for cutting and threading 1/2-in. to 4-in. pipe. Kohler generators are furnished as optional equipment.

### Non-Clog Spray Nozzle Eliminates Strainers

KEY NO. E-6115

GREENFIELD, Mass.—A new line of Teflon spray nozzles has been announced by Bete Fog Nozzle, Inc. here.

New nozzles are claimed to be non-clogging, corrosion resistant with practically any spray, long - wearing, and inexpensive.

Due to the manufacturer's spiral design each nozzle can be made from one small piece of Teflon. There are no internal parts to clog, and strainers can be eliminated, according to the company.

Nozzles, called the "TF" series, are available in 10 models with narrow angle (50°) or wide angle (120°) hollow cone spray pattern in five different flow rates from 5 to 50 g.p.m. They are threaded with 3/8 in. or 1/2 in. male pipe thread.



### Large Tower Construction Included In Small Unit



KEY NO. E-6116

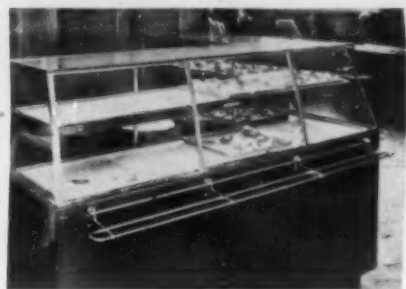
ST. LOUIS—"Water-Master" cooling tower for small commercial and residential use, indoor or outdoor, has been introduced by Lillie-Hoffmann Cooling Towers, Inc.

It is said to incorporate large tower construction and performance features in compact 3, 5, 8, and 10-ton capacity units. Built of heavy gauge steel, the internal steel parts are coated with special mastic, with sound deadening and rustproofing qualities.

All exterior parts are prime coated with rust inhibiting paint and finished with an enamel paint for long life and weather-proofed protection. Towers are shipped assembled with skids for ease in handling and are equipped with overflow and adjustable float valve.

Standard equipment includes air inlet screens, and top distribution pan cover.

Towers are equipped with multi-blade, deep pitched low speed fans. Pump with bronze impeller and shaft is submerged in water of basin without packing boxes or seals.



### Cold Plate Mfr. Claims No Sweating, No Dripping

KEY NO. E-6117

LAKELAND, Fla.—Snowplate Mfg. Co. has been formed here to produce a non-sweating, non-dripping chromed cold plate, according to J. Ingvarsen.

The plate is 2 in. thick and cold only on the top side. Ingvarsen pointed out. He said it is used extensively in Denmark for display of perishable foods.

Ingvarsen's cold plate was patented in May, 1953, in this country.



### "We maintain water cooling efficiencies safely and continuously with Solvex"

Much of the trouble encountered in the operation of water-cooling equipment can be prevented. Scale, algae, dirt and slime, if allowed to accumulate in "evaps," cooling towers, shell and tube condensers will cause real trouble. Head pressures rise and the machine does not function efficiently. The way to prevent such trouble is to use SOLVEX MAINTENANCE GRAINS regularly on newly installed or cleaned equipment.

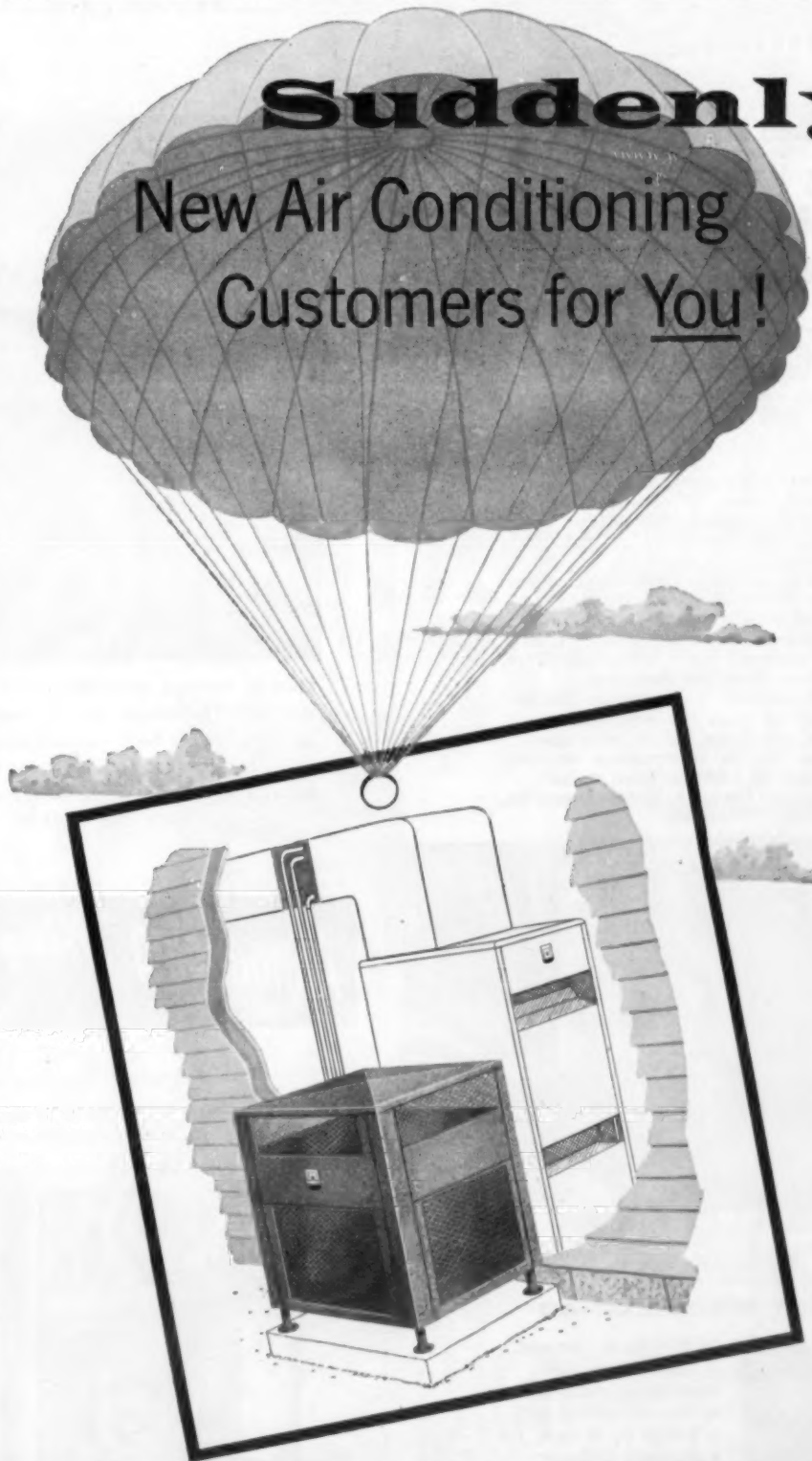
If you now have a machine that needs cleaning, SOLVEX CLEANER GRAINS will correct the trouble quickly and safely. They can be used while the machine is in operation and will reduce the pressure in a matter of minutes. SOLVEX is also available in tablet form. It is

safe for the operator who uses it and for the equipment he uses it on. In cases where very bad conditions exist ULTRA-SOLVEX is recommended.

Remember SOLVEX CLEANER FORMULA corrects your trouble. SOLVEX MAINTENANCE FORMULA, when used regularly, prevents a recurrence of the trouble. See your wholesaler or write—



## Suddenly... New Air Conditioning Customers for You!



How many people are there in your neighborhood who've been wanting air conditioning but have held back because of high water rates or water restrictions?

Every one of those people is now—suddenly—an excellent prospect for an air conditioning installation. American-Standard's new Sunbeam outdoor air-cooled unit requires no water whatsoever—uses only electricity and air. And it provides fully automatic control of temperature and humidity.

What's more, this unit combines economically with the home owner's new or existing heating system... enables you to offer year 'round comfort at a competitive price.

### New SUNBEAM AIR-COOLED UNIT by AMERICAN-Standard Requires No Water Uses No Floor Space

Available in 2 hp and 3 hp sizes, the New Sunbeam air-cooled condensing unit is designed to cool the entire house. As shown here, in a typical installation, it ties in with a Sunbeam evaporator unit in the furnace ductwork, and only a few connections are needed. Besides doing away with water and saving indoor floor space, this outdoor system has another advantage—it keeps all mechanical operating parts outside the house for quiet comfort inside. Cooling unit is covered by Sunbeam 5-Year Protection Plan.

**NEW!** Sunbeam 1955 Cooling Sales Aids for dealers—a complete promotional package designed to help you locate prospects quickly and close orders fast. Ask your Sunbeam distributor for full details.

SUNBEAM



## SUNBEAM

### AIR CONDITIONER DIVISION

American Radiator & Standard Sanitary Corporation  
Elyria, Ohio

Serving home and industry: AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS & WALL TILE  
DETROIT CONTROLS • KEWAWEE BOLLERS • BOSS EXCHANGERS • SUNBEAM AIR CONDITIONERS



## What Was New At the Restaurant Show

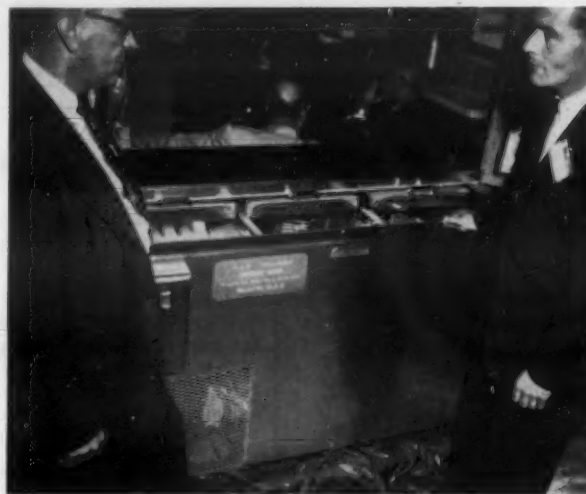


"YOU CAN ERECT THIS WALK-IN ENTIRELY from the inside," Jan Dohl of The Marby Co. tells visitors to the Restaurant Show. It is made of Douglas fir and has a self-contained refrigeration unit. KEY NO. E-6118.

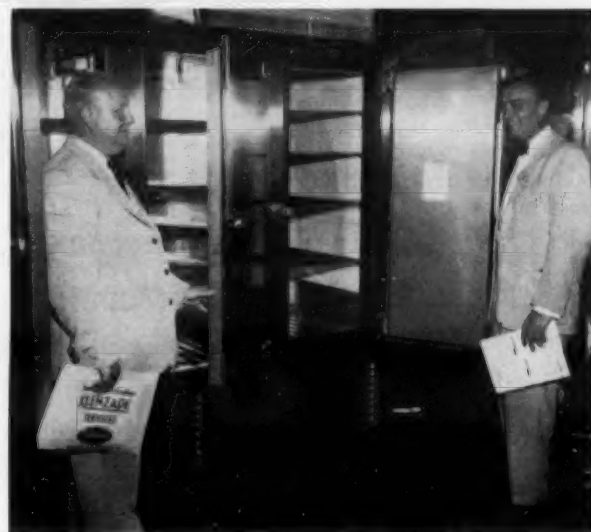
For further details on items pictured on this page please use the "Information Center" blank on page 24; additional pictures from the Restaurant Show appear on pages 22 and 23. The issue of May 30 also contained photo coverage of the show, and still more pictures will appear in a future issue.



DRAWING A DRINK FROM the 42-g.p.h. cafeteria water cooler that Sunroc Corp. claims is the most compact ever designed is June Funke of St. Louis. It is available for either wall or island installation. KEY NO. E-6119.

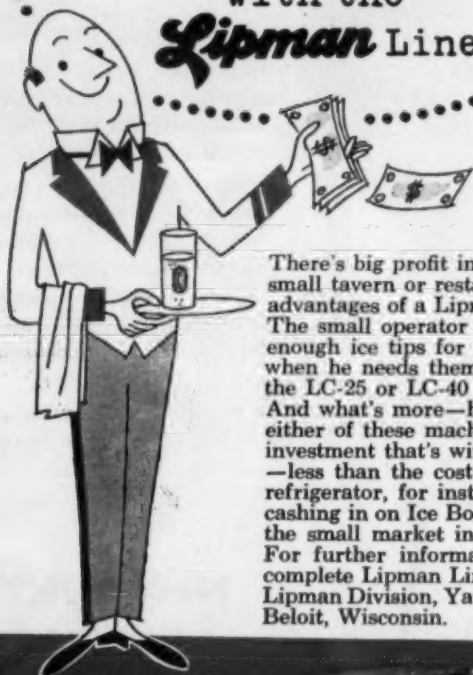


ENTERING THE BEVERAGE COOLER field with three sizes of welded all-aluminum cabinets, Foster Refrigerator Co. offers the restaurateur a beverage cooler to match his refrigerator and freezer. G. Collins (r.), Foster regional sales manager, tells Charles E. Sperow of Akron. KEY NO. E-6121.



TWO NORMAL TEMPERATURE AND ONE FREEZER compartment are offered in this Pinnacle Equipment Co. reach-in. Leon Bane (l.) and Nick Beresford, Pinnacle dealers in Lafayette, Ind., pose with the box. KEY NO. E-6122.

### Hit the "Small" Market for Big Profits with the *Lipman* Line



There's big profit in selling the small tavern or restaurant on the advantages of a Lipman Ice Boy. The small operator can get enough ice tips for his needs—when he needs them—with either the LC-25 or LC-40 Ice Boy. And what's more—he can get either of these machines for an investment that's within his reach—less than the cost of a refrigerator, for instance. Start cashing in on Ice Boy sales to the small market in your area. For further information on the complete Lipman Line, write Lipman Division, Yates-American, Beloit, Wisconsin.

#### LIPMAN ICE BOY MODEL LC-25

Fits right in under the bar—delivers up to 1,000 King Size ice tips per day—and stores enough for over 570 servings. 37½" high, 28½" long, and 24" deep. Equipped with the famous Dial-a-size Control Unit that lets operator dial the size ice tip he wants.



#### LIPMAN ICE BOY MODEL LC-40

For the larger bar, restaurant, or cocktail lounge. Slightly larger than the LC-25—but delivers more ice tips. Up to 1,700 per day, if needed. And storage space holds over 900 ice tips to cope with rush hours. Dial-a-size Control Unit to select the size ice tip needed.



LI-803

**Lipman** ... a division of Yates-American



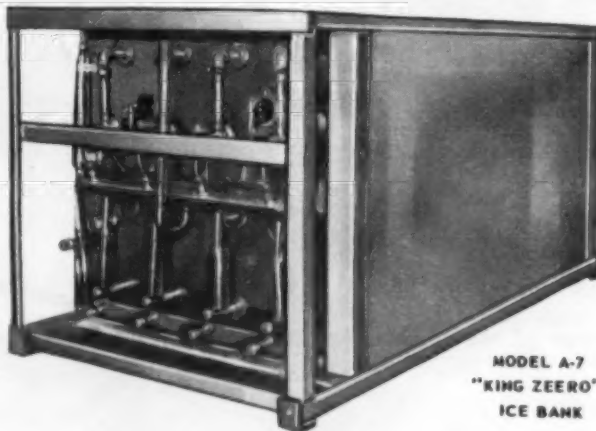
SLIDING DRAINER OVER REMOVABLE stainless steel ice storage bin in Progressive Metal Equipment, Inc.'s new cafeteria water cooler is shown by Benjamin Brodsky, sales manager (l.), to J. E. Alford of Montgomery, Ala. KEY NO. E-6120.



INDICATING THE RECESSED DOOR that is flush with the exterior cabinet wall on Foremost Fountains, Inc.'s new refrigerated sandwich case is John J. Noonan, vice president and general manager of the company. Die stamped tops for kitchen and backbar equipment are displayed at the right. KEY NO. E-6123.

## Announcing "King Zeero's" NEW SERIES OF ICE BANKS for More Efficient, Economical Air Conditioning

The "King Zeero" ICE BANK is designed for air cooling in Churches, Mortuaries, Theatres, Offices, Stores, Auditoriums, Factories, Clubs, Restaurants, etc. Ice Banks may be added to existing systems for increased capacity. The "King Zeero" ICE BANK is designed to deliver 32° to 34° F. sweet water for recirculation through secondary equipment. Design temperatures may be obtained with mixing valves.



MODEL A-7  
"KING ZEERO"  
ICE BANK

CAPACITIES - 500 lbs. to 30,000 lbs. (72,000 B.T.U.'s to 4,320,000 B.T.U.'s) in a single unit. Multiple units may be installed.

**THE KING ZEERO COMPANY**  
4302 W. Montrose Ave., Chicago 41, Ill.

#### CONSIDER THESE ADVANTAGES--

- DIRECTED COURSE OF WATER travels with "built-in" agitation.
- NO MECHANICAL AGITATION REQUIRED.
- LARGE WATER COMPARTMENTS spaced on 11" and 12" centers.
- 33% EXTRA ICE CAPACITY safely attained with up to 300 G.P.W. water flow.
- ICE IS "BURNED OFF" PLATE COILS progressively, exposing prime and secondary surface for maximum flash cooling capacity.
- ICE THICKNESS automatically controlled - eliminates "freeze ups."
- 94 SIZES to fit space requirements. Other designs for special applications.
- OUR ENGINEERING SERVICE and plant facilities are at your disposal.

#### MAIL COUPON TODAY

King Zeero Co., 4302 W. Montrose Ave., Chicago 41, Ill.

☐ Please send me your new ICE BANK Catalog.

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_



## Current Literature

To obtain further information on the literature listed below, please refer to key number preceding listing. Please use the "Information Center" form on "What's New" page.

### Drayer Issues New Spec Sheet on Unit Coolers

—KEY NO. Q-610—

LOS ANGELES—A new specifications sheet on Drayer-Hanson "Flocold" unit coolers for applications where temperatures over 34° F. are required was published recently by Drayer-Hanson, Inc. here.

The red and browntone sheet contains photographs of the basic unit, dimensional drawings, and construction-performance data. A table of dimensions and specifications is included. Flocold models F-340 through F-4800 are listed. The new series is available in capacities up to 3 tons.

### 48-Pg. Bulletin Covers High Pressure Air Transmission

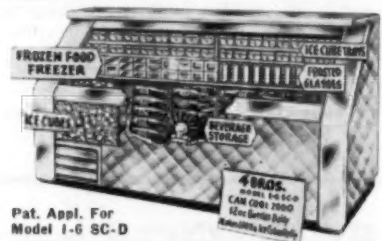
—KEY NO. Q-611—

DANBURY, Conn. — Connor Engineering Corp. has published a new 48-page bulletin (K-33) on high-pressure air transmission.

While cataloging the company's line of high-pressure diffusers or, more accurately, combination valves and reducing chambers, the bulletin "is virtually a textbook which undertakes to make available in one manual all current data on this essentially new and still advancing air distribution technique," the company said.

Much information of value to the air conditioning, heating, and ventilating engineer is provided, some of it never before published, according to the manufacturer.

Where high-pressure air transmission may be used to advantage, engineering considerations, single and dual duct designs, typical layouts, velocity and pressure factors, duct sizing and construction, etc.



Pat. Appl. For Model 1-6 SC-D

### 4-BROS. New 1955 All-Purpose 5-IN-1 ICE CUBE MAKER & Comb. BEVERAGE COOLER

1. Makes 250 lbs. ice cubes daily. 2. Cools 2000 12-oz. bottles daily. 3. Frost glasses shelf or freezer, 25° F. 4. Storage for cubes or cocktail bottles. 5. Defrosts automatically. 6. Easy-Out trays. 7. 5-YEAR Factory Warranty on unit. 8. Gleaming #430 Stainless steel interior and exterior.

Sizes: 4 to 10 Ft. Long, 27" W., 39" H.

### 4-BROTHERS

REFRIGERATION MFG. CO.  
1423-31 SOUTH 8TH ST., PHILA. 47, PA.  
Exclusive Franchises available to dealers.

**See HOW MUCH YOUR DOLLAR BUYS!**

• REFRIGERATION PARTS  
• ELECTRICAL SUPPLIES  
• MOTORS • TOOLS

**FREE CATALOG**

**G&E EQUIPMENT SUPPLY CO.**  
DULLES, VA. • CHICAGO, ILL.  
Phone: RM 3-0345

### MARSH Instruments

THE SERVICEMAN LINE of Testing Gauges, Testing Thermometers, Timers, etc.  
PRESSURE GAUGES and Dial Thermometers for all services.  
MARSH-ELECTRIMATIC, Water Regulating Valves, Solenoid Valves.  
MARSH INSTRUMENT COMPANY  
Sales Affiliate of J. P. Marsh Corporation  
Dept. D., Skokie, Ill.

### Motor Buying Information Catalog Available from G-E

—KEY NO. Q-612—

SCHENECTADY, N. Y.—A 28-page catalog of buying information on a.c. motors is available from the General Electric Co.

Designated GEC-1026, the bulletin presents buying information on standard a.c. fractional and integral horsepower motors in most general use. Included are general and definite-purpose fractional horsepower motors, and f.h.p. gear motors.

A special section on the selection of integral horsepower motors covers horsepower requirements, enclosures, starting current limitations, speeds, motor types, and selection of fuses and circuit breakers. Descriptions and specifications include single-phase, polyphase, totally enclosed fan cooled, and gear-type integral horsepower motors.

### Low Temp Equipment Described In Bush Catalog

—KEY NO. Q-613—

W. HARTFORD, Conn.—Bush Mfg. Co. has issued a 16-page, 2-color catalog covering the company's new line of low temperature refrigeration equipment.

Included are illustrations, system diagrams, and complete specifications on the new Bush "Inner-Fin" "HG" hot gas defrost systems, "ED" electric defrost systems, and "GD" glycol defrost product coolers as well as "Therm-O-Cycle" systems and water defrost unit coolers.

### Tips on Maintaining Calcium Chloride Brine Offered

—KEY NO. Q-614—

WASHINGTON, D. C.—Brief RB-1 "Maintenance of Calcium Chloride Brine," giving suggestions for accurately testing brine strength and tips for strengthening brine, has been published recently by the Calcium Chloride Institute.

It includes data on tests for ammonia leakage, alkalinity or acidity of brine, corrosion inhibitors, and methods for correcting acidity and alkalinity.

A chart indicates proper amounts of calcium chloride needed in preparing or strengthening brine.

### Brochure Pictures Expanded Line of Oil Separators

—KEY NO. Q-615—

BIRMINGHAM, Mich.—A new brochure describing its expanded line of oil separators for refrigerating and air conditioning applications was announced here recently by Temprite Products Corp.

The colorful eight-page brochure pictures how the oil separator works, shows typical applications, and provides specifications on the various models. It also gives data on adaptor block assemblies for the separators.

### Wide Variety of Registers, Grilles Outlined In Catalog

—KEY NO. Q-616—

CEDAR GROVE, N. J.—Stewart Mfg. Co., manufacturer of industrial and residential registers and grilles, has announced a two-color catalog showing in detail every type of air conditioning outlet manufactured at the plant.

In addition to photographs and detail sketches, prices and sizes are listed. A section is devoted to charts of deflection.

### Mobile Military Cooling Units Illustrated In Booklet

—KEY NO. Q-617—

CINCINNATI—A four-page illustrated booklet describes the new line of Ellis & Watts "MIL-AC" air conditioners, mobile units designed primarily for military trailers.

MIL-AC air conditioners are built to meet military specifications.

They are automatically controlled to ventilate, circulate, cool, heat, filter, humidify, and dehumidify.

They operate effectively under extreme climatic conditions from -65° to 130° F., the company further claims.

This bulletin contains detailed information on applications, specifications, and other valuable data.

### New Brochure Covers Wall Mounted Air Conditioners

—KEY NO. Q-618—

DAYTON—Individual room controlled air conditioning for multi-room buildings is covered in a brochure by Airtemp Div., Chrysler Corp.

Illustrations of multi-story and single story applications are included, showing both interior and exterior views.

Specifications for "Comfort Rated" units are available for 1/2, 3/4, and 1-hp. capacities, according to the company.

### Condensed Cooling Control Catalog Announced by Penn

—KEY NO. Q-619—

GOSHEN, Ind.—Penn Controls, Inc. here announces a new condensed cooling catalog for the refrigeration and air conditioning industry.

The catalog—Bulletin 1487-AA—illustrates and describes many of the cooling controls manufactured by Penn as well as giving condensed information on specifications, application data, and the procedure for ordering any of Penn's complete line of cooling controls.

Included in this catalog for the first time is the new Series 880 combination heating-cooling thermostat.

This thermostat is available in seven different basic constructions for correct application with all residential air conditioning systems, the company said.

### Booklet Covers Dunham Line of Condensation Pumps

—KEY NO. Q-6110—

CHICAGO—A new eight-page, two-color booklet on condensation pumps has been published recently by the C. A. Dunham Co. The booklet, No. 1403, contains photos, drawings, and other technical data on capacities and dimensions pertaining to the construction, application, and installation of Dunham condensation pumps.

### Method for pH Control Of Cooling Tower Water

—KEY NO. Q-6111—

PHILADELPHIA—A 4-page process data sheet, published by Leeds & Northrup Co., offers suggestions on measurement and control of pH of cooling tower water, and describes equipment for this application.

The data sheet includes conservation of make-up water, wood protection, prevention of scale, and minimization of slime accumulation.

A copy of process data sheet 700(1), "L&H pH Control of Cooling Tower Water," is available upon request from the manufacturer.

### Permaglas Bulletin Describes Water Heater Improvements

—KEY NO. Q-6112—

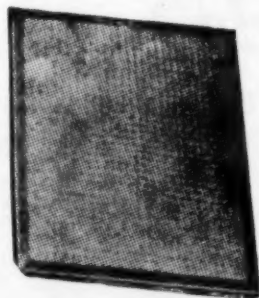
KANKAKEE, Ill.—Bulletin CH-122, published by Permaglas Div., A. O. Smith Corp., describes the improvements to the Burkay commercial water heater, model 601A, including a new and completely redesigned Throttlo-Flo thermostat which proportions gas input to the rate of flow of hot water and the number of degrees the water temperature must be raised.

This makes it possible to maintain water temperature accurately within 2° of the thermostat setting, according to the water heater manufacturer.

**no other built so good  
to perform as well  
or last as long**

**Microtron**

ELECTROSTATIC AIR FILTERS



Microtron air filters will, when cleaned in accordance with instructions, last as long as the equipment in which they are installed.

Method of cleaning is quick, easy and simple. Just immerse or spray with cold water!

**NO MESSY OIL OR ADHESIVE IS REQUIRED AFTER CLEANING!**

made in all standard, popular and special sizes!

**Distributor, Jobber and Dealer Franchises**

available in some areas. Here is a fine product with a splendid profit margin. Phone, wire or write for details TODAY.

**Microtron**  
CORPORATION

Franklin 7-1039

CHARLOTTE, NORTH CAROLINA

P. O. Box 2092



## 'CFM Method' Is Flexible Means for Designing Distribution System for Home Heating, Cooling

E. LANSING, Mich.—A new, flexible method of designing a distribution system for combination heating and cooling in residences was explained at the 24th annual forced warm air conference conducted at Michigan State college here recently.

Called the "CFM method," it is intended to provide an air distribution system that will be as well balanced for both heating and cooling as is possible for such systems.

The CFM method was devised by C. L. Grandstaff, chief application engineer for the C. A. Olsen Mfg. Co., heating and cooling equipment manufacturer. Grandstaff and Eston G. Swain, another Olsen application engineer, taught the system to some 60 warm air dealers during the four-day conference.

They said that they have submitted an outline of their method to the National Warm Air Heating and Air Conditioning Association for use as a supplement to the association's Manual 9. This manual covers the design and installation of warm air winter air conditioning systems.

The CFM method is also intended for use with the tentative third edition of Manual 11 covering design and installation of sum-

mer air conditioning for new and existing residences.

## Claim Wider Application For CFM Method

Swain and Grandstaff said that precalculated B.t.u. methods are good when the design conditions fall within their limitations. However, the CFM method is not limited by fixed bonnet temperatures nor by fixed static pressures except those that mark the limitations of the equipment to be used.

The c.f.m. requirement represents the only common denominator between the calculated B.t.u. required for heating and that required for cooling, they emphasize. Therefore, the CFM method should be the easiest to use when understood, they believe.

When designing a winter air conditioning system, the air volume required for each room (c.f.m.) is predicated upon the actual heat loss calculated, they explained. This, however, is not the case when using a factory sized cooling unit, such as is commonly installed in residential work.

The cooling unit capacity is based upon the circulation of a given quantity of air over the coil and most equipment is rated for

400 c.f.m. per ton. Therefore, to obtain full rating, it is then necessary that the cooling system be designed to deliver the c.f.m. per ton used for rating.

They noted that Manual 11 establishes 300 c.f.m. per ton as the air volume to be used for humid areas, 360 c.f.m. per ton for the medium humidity areas, and 420 c.f.m. per ton for the dry areas. This volume of air, approximately, must be circulated and be equally distributed to each room in direct ratio to the calculated room cooling requirement.

Because of this requirement, there does not exist any fixed ratio between cooling B.t.u. and heating B.t.u. that can be used for the design of a balanced system.

For that reason, Swain noted, there is no logic in believing that to increase the heating duct size by a certain percentage will provide sufficient capacity for cooling.

He pointed out that there is a considerable difference in the heat carrying capacity of a c.f.m. of air for heating and one for cooling. While the difference between bonnet temperature and outlet temperature may be 70° F. in heating, it will only be about 20° F. in cooling. With a low temperature differential, it takes considerably

## Residential Air Conditioning

HEATING										Bonnet Temperature Selection Chart										COOLING									
Design Bonnet Temperature and Heating Ratio										Duct Length and Required Cooling C.F.M.																			
110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	10'	20'	30'	40'	50'	60'	70'	80'	90'	100'										
1	11	12	14	16	17	19	20	21	21	22	23	24	25	25	26	27													
2	13	15	17	19	21	23	18	26	27	28	29	30	31	31	32	33	34												
3	15	16	18	21	23	25	27	30	31	32	33	35	36	37	38	39	40												
4	15	18	21	24	27	30	32	35	36	38	39	41	43	44	45	46	47												
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7	22	26	30	34	38	42	46	50	52	54	56	58	61	63	65	67	69												
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9	26	32	37	41	47	51	56	60	62	65	67	70	73	74	76	78	81												
10	28	34	40	45	50	55	60	65	67	70	72	75	77	80	82	85	87												
11	30	37	43	48	54	59	65	70	72	75	78	81	83	86	88	92	94												
12	32	40	46	51	58	64	69	75	78	81	83	87	89	92	95	98	101												
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14	37	45	52	58	65	73	79	85	88	92	94	98	101	104	107	110	114												
15	39	47	55	62	70	78	83	90	93	97	100	104	107	111	113	117	121												
16	41	50	58	65	74	80	88	95	98	102	105	110	113	117	120	124	127												
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23	56	68	79	89	100	110	120	130	134	140	144	150	153	159	164	170	175												
24	58	71	82	92	103	113	123	133	138	144	148	155	158	165	170	176	181												
25	61	74	85	96	107	118	128	138	143	150	154	161	164	172	176	183	188												
26	63	76	88	99	110	121	131	141	146	153	156	163	166	174	178	185	190												
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31	74	90	104	117	128	139	149	159	164	171	175	181	184	193	199	206	213												
32	76	92	107	120	131	142	152	162	167	174	178	184	187	196	202	210	217												
33	78	95	110	123	134	145	155	165	170	177	181	187	190	199	205	214	221												
34	80	98	113	127	138	149	159	169	174	181	185	191	194	203	210	218	225												
35	82	101	116	130	141	152	162	172	177	184	188	194	197	206	213	221	228												
36	84	103	118	132	143	154	164	174	179	186	190	196	199	208	215	223	230												
37	86	105	120	134	145	156	166	176	181	188	192	198	201	210	217	225	232												

TO DETERMINE WHAT CONDITIONS the cooling c.f.m. in a combined heating and cooling system will impose on the heating system, Eston Swain and C. L. Grandstaff of the C. A. Olsen Mfg. Co. worked out this "Bonnet Temperature Selection Chart." Its use is described in the accompanying story.

more air to make the desired change in temperature.

### Not a 'Quickie' Method

The CFM method of design is not a "quickie" method for use in estimating a job. Rather it is a thorough analysis of what is needed to do the best and most practical job. It involves the use of several forms and tables, making it practical for the average heating man to use.

Swain recommended that the dealer make his bid for a job on the basis of a "box survey." This will give him the estimated heat gain and loss for the entire building and the estimated number of duct runs. From this he can estimate the size of equipment needed, cost of equipment, sheet metal and installation costs, and a percentage for overhead.

Then if the prospect is seriously

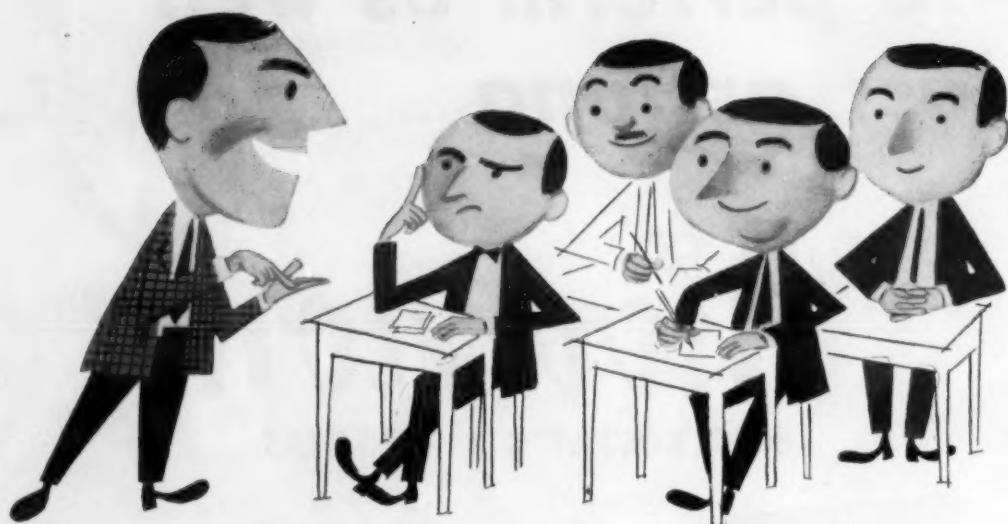
interested in his quotation and he is quite certain he will get the job, he can make the more detailed survey by the CFM method, breaking down the heat loss and heat gain room by room to accurately size the piping and registers.

The work done on this survey will represent possibly \$100 worth of engineering on the dealer's part, Swain advised, and it should never be left with the prospect. If your prospect kept this plan, a competitor could easily underbid you on the basis of your own engineering and make money on the job, he warned.

First step in the CFM method is to calculate the heat gain and heat loss for the building, room by room, including such places to be heated or cooled as hallways, utility rooms, and crawl spaces.

Swain reminded dealers that  
(Continued on next page)

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## Distribution System for Heating, Cooling--

(Continued from preceding page) when making such calculations, they include closets in the space toward which they open and not in the room into which they may be recessed.

From this data select the heating equipment by the bonnet rating of the furnace and the cooling unit by the required B.t.u. calculated. Remember that better comfort results are obtained from a unit that is slightly undersized rather than oversized, Swain noted.

You must keep the air in circulation to regulate the humidity properly, he declared, and avoid stratification of the air in the rooms.

"If I had my way, I would disconnect the fan from the cooling equipment and keep it running continuously all through the cooling season," he asserted. "The ability to remove latent heat from the body by evaporation is as important for human comfort as lowering the temperature."

### Try Cutting Heat Load To Use Smaller Unit

If the cooling requirements fall slightly beyond the capacity of a unit, examine the construction details and, if possible, make recommendations for changes that will reduce the load, Swain and Grandstaff suggested in their outline.

"Quite often it is possible to add shading devices, attic ventilating fans, or extra insulation at a lower cost than would be represented by a larger cooling unit and its equally larger distribution system," they said. "Then, too, the reduced operating costs should also be considered."

"If a load cannot be reduced to within 1/4 ton of desired unit capacity, use the next larger size piece of equipment. In the case of a large job, use two smaller systems and zone the structure. Two 2-ton units would be far better than one 5-ton unit where the load is beyond the allowable limits for a 3-ton system."

However, Swain admitted that the single 5-ton unit would be cheaper to purchase and install than two 2-hp. systems.

Next step is to determine the number of outlets for each room. For estimating purposes, one outlet should be provided for each 8,000 B.t.u. of heating and each 4,000 B.t.u. of cooling.

These ratios between B.t.u. and number of outlets are carefully figured, Swain said, to maintain velocity on the heating side so as to get the proper air throw and, at the same time, assure quiet operation during cooling.

### Determining Diffuser Locations Next Step

Locations for diffusers are then selected. Perimeter locations and floor diffusers are preferred by Swain and Grandstaff.

"Biggest advantage of perimeter heating is to get the heat at the outside wall where the heat loss is," Grandstaff explained.

"A perimeter type diffuser should be used that will shoot the air up the wall rather than straight out into the room," he continued. "By doing so, you can operate at much lower air temperatures and still get comfort."

"If extra runs are needed for cooling," Swain and Grandstaff said, "place the heating diffusers where they will serve the heating requirements to best advantage. Place the extra outlets for cooling at the perimeter also, if possible."

"Or select a high wall location which will permit discharging the cooled air into the room at some point where it will best be distributed over areas that might not be covered by the perimeter diffusers, but not so as to strike the occupants of the room."

"Be cautious in the selection and use of perimeter wall diffusers and baseboard sections for cool-

ing," they advised. "Although these devices are unexcelled for heating, they are apt to be troublesome for cooling."

"Properly sized with the correct throw and spread they will serve satisfactorily when the drapes are not drawn. However, when confined behind close fitting drapes, throw and spread are impaired."

"Although the required air volume may enter the space, it may not properly diffuse and could produce a condition of low temperature air stratification on the floor and undesirable temperatures at the upper and intermediate levels."

### Calculate Required Outlet c.f.m. for Cooling

Next step is to measure the duct run distance from the unit plenum to each outlet and then determine the required outlet c.f.m. for cooling. This information is obtained from a table of "CFM factors for total heat gain" which gives the number of c.f.m. needed for each 1,000 B.t.u. heat gain.

This figure varies according to the humidity zone of the country in which the installation is made and the number of feet between unit plenum and outlet.

Then it is necessary to find the bonnet temperature that the cooling c.f.m. would produce during the heating cycle. The bonnet temperature is required, Swain and Grandstaff said, "in order to design into the distribution system a balance that will allow satisfactory operation from either the heating or the cooling system."

### Using the Bonnet Chart

"To determine what conditions the cooling c.f.m. would impose on the heating system, it will be necessary to refer to the chart headed 'Bonnet Temperature Selection Chart.'"

This chart, reproduced on page 28, is one that Swain and Grandstaff have just recently worked out and were teaching for the first time at the Michigan State and Purdue university conferences.

"On this chart first locate at the top right the measured duct length nearest to that of the outlet being checked," they instructed. "Read down this column until the figure nearest the cooling c.f.m. is noted. Then cross to the left to that figure that most nearly represents the heat loss to be supplied by the outlet. Then proceed upward to the design bonnet temperature at the top of the column."

"It will be discovered," they continued, "that the required bonnet temperature will not be the same for all runs. Therefore it will be necessary to analyze the temperatures indicated and to select one temperature that will most nearly meet all needs."

To do this, they have devised the following method:

First, add together the cooling c.f.m. for all runs at the same bonnet temperature.

Do this for each bonnet temperature represented.

Multiply the c.f.m. for each bonnet temperature by the air density per cu. ft. of air as given on page 14 of NWAHA's Manual 9 to get the total weight of air for each bonnet temperature.

Add up all the c.f.m. and all total weights.

Divide the total weight of air by the total c.f.m. to get the average density per cu. ft.

Check the resulting density on the table on page 14 of Manual 9 to get the bonnet temperature to be selected. If the resulting density falls between two bonnet temperatures, take the lower one in order to get more air through the system, they advised. Thus, if the resulting density figure should indicate a bonnet temperature of 135° F. select 130° F. as the bonnet temperature of the equipment to be installed.

By taking into consideration the air density along with the c.f.m.

requirements, this method eliminates all guesswork as to which bonnet temperature to select when two or more temperatures have about equal c.f.m. totals, they contend.

With this information, they noted, it can now be seen that those rooms requiring a higher bonnet temperature based on cooling c.f.m. than the equipment finally selected, will call for more air for heating that is required for cooling.

Where high bonnet temperatures (150 or 160° F.) are indicated, this may in some instances require dampering during cooling periods. On rare occasions it could result in an extra run for heating that would not be used for cooling.

"Most winter air conditioning units," Swain and Grandstaff said, "are designed to use a minimum temperature rise of 70° F. through the unit, or 140° F. bonnet temperature. For this reason, the selected bonnet temperature should not result in air quantities that exceed that required for the 70° F. rise."

"To check the maximum allowable c.f.m. of a unit, multiply the rated B.t.u. at the bonnet by .013. If the results are equal to or more than the total heating c.f.m. of the system, the equipment is satisfactorily matched to the job."

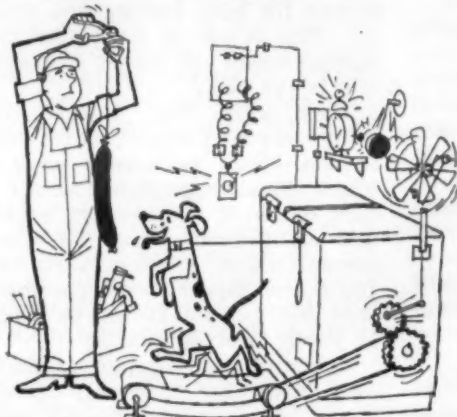
"Should the allowable unit c.f.m. be found to be less than that required by the system, the system should be designed for its required

air volume. During the heating season, added resistance in the form of dampers should be applied to reduce the air volume sufficiently to obtain a temperature rise of 70° F. or more, or the blower speed should be reduced. This method will be satisfactory for perimeter systems."

"When high wall registers or ceiling diffusers are used, it is suggested that by-pass arrangements be incorporated in the system to allow the full volume of air to be used for both heating and cooling. This method will circulate over the heat exchanger only that quantity of air needed for 70 to 100° F. temperature rise and by-pass the rest."

(Concluded on next page)

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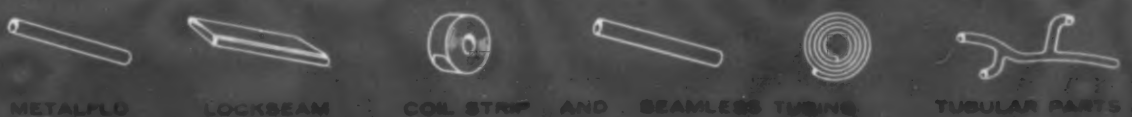
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## Distribution System for Heating, Cooling--

(Concluded from preceding page)

### Determine Room c.f.m. for Heating

Next step is to determine the room c.f.m. for heating. This is determined by applying the bonnet temperature to be used and the duct length to each outlet to Table A-1 in Manual 9. The table gives the c.f.m. per 1,000 B.t.u.h. Multiply the c.f.m. per 1,000 B.t.u.h. per outlet to get the total outlet c.f.m.

You now have the heating and cooling c.f.m. per outlet and will use the largest value indicated for system sizing.

"In perimeter heating," the pair said, "the supply runs are longer than the return runs. Therefore, it is common practice to use a greater portion of the available external static pressure on the supply side than on the return side.

"If the unit is rated at .20 in. external static pressure, then .15 in. may be used on the supply side and .05 on the return side. The division may be in any proportion desired, provided the total does not exceed the unit rating.

"The design engineer must recognize the fittings that are required to convey the air from the unit to the outlet and account for their resistance. The greater the equivalent length value the larger the ducts must be to convey the

air to the outlet. Good fittings reduce resistance, allow smaller and sometimes fewer runs, and thus reduce installation costs."

The equivalent length value of fittings means the amount of resistance a particular fitting will offer as compared to a length of straight pipe. For instance, a rectangular fitting providing a 90° angle between plenum and duct would have a resistance equal to 35 ft. of straight pipe. A table of equivalent lengths for the various types of fittings is provided on pages 6 and 7 of Manual 9.

As a result, a duct run between plenum and outlet may actually measure 45 ft., for instance, but have a total effective length (with equivalent lengths for fittings included) of 130 ft.

"When using high wall registers or ceiling outlets," they continued, "refer to the manufacturer's data and select the units that will be required based on the room c.f.m. and the spread necessary to satisfactorily cover the area.

"Observe carefully the resistance, or pressure drop required. If the outlet uses up too much of the available pressure there will not be enough left for duct sizing.

### Discharge Velocities for Perimeter Outlets

"When designing for perimeter outlets, it is suggested that the

velocity of the discharge diffuser should provide face velocities ranging between 500 and 600 f.p.m. and that the pressure drop should be between .03 in. and .04 in. for the c.f.m. to be delivered. Sometimes lower velocities and pressure drops will have to be used because no smaller diffuser is available."

Swain explained that lower velocities are not generally sufficient to get the needed air for cooling while higher velocities will cause the air to bounce off ceilings and walls and make the occupants uncomfortable—especially women in low-neck gowns.

"When baseboard sections are to be used," Swain and Grandstaff went on, "select short sections that have the required capacities and pressure drop characteristics. However, it is recommended that floor diffusers be used if possible, as they provide the most satisfactory system for both heating and cooling. This is one of those rare occasions where the lowest cost system is the best."

They noted that because the total equivalent length, which represents the resistance against which the air must flow, varies for each outlet, it is necessary to relate all pressure drops to some common value. Friction charts use 100 ft. for this purpose. The pressure drop per 100 ft. can be found in Table D of Manual 9.

Using the appropriate pressure drop and the previously determined c.f.m. necessary at each outlet, branch duct sizes can be

## WORK SHEET FOR HEATING & COOLING

Form 9HC March 2, 1955

LINE	ITEM	REFERENCE	SUPPLY — BRANCH, STACK, and REGISTER SIZING							
			1		2		3		4	
			HEAT	COOL	HEAT	COOL	HEAT	COOL	HEAT	COOL
1	Outlet No.	From Plan								
2	Room Use	From Work Sheet 9A and 11								
3	Run Use									
4	1000—BTU per Hr. Room Total	Line 14 on Work Sheet 9A								
5	1000—BTU per Hr. Per Outlet	Line 18 on Work Sheet 11								
6	Actual Duct Length in Ft. Horizontal and Vertical	Line 4 divided by No. of Outlets								
7	Design Bonnet Temp. for Heating	Measure from Plan								
8	CFM per 1000—BTU	Table A and Line 6								
9	CFM for Each Outlet	Heating Table A and Lines 8 and 7								
10	Bonnet Pressure	Lines 5 Times Line 8								
11	Equip. Length (Fittings Only)	Select from Main Tr. having Max. Bonnet Press. Line 11								
12	Total Equip. Length	Fig. 1 and Lines 23 and 24								
13	Register Deflection in Degrees	Line 6 Plus Line 11								
14	Throw from Register in Ft.	Determine from Plan								
15	Register Free Area	Measure from Plan								
16	Register Pressure Loss	See Manufacturers Data								
17	Actual Duct Loss (Total)	See Manufacturers Data								
18	Loss per 100 ft.	Line 10 Minus Line 16								
19	Duct Size (Round)	Table D and Lines 12 and 17								
20	Stack Size	Table E and Line 19								
21	Register Size	Table F and Line 20								
22	Register Location	Table G and Line 15 and 20								

\*If this maximum value of Bonnet Pressure is not high enough to take care of maximum loss on lines 18 and 19 or results in too large main trunk lines on big jobs, then use higher bonnet pressure. (Used only for high wall and ceiling outlets)

23	Total CFM any ONE MAIN TRUNK	800 to 1000	1000 to 1200	1200 to 1400	1400 to 1600	1600 to 1800	1800 to 2000	2000 to 2200	2200 to 2400	2400 to 2600	2600 to 2800	2800 to 3000	3000 to 3200	3200 to 3400	3400 to 3600	3600 to 3800	3800 to 4000	4000 to 4200	4200 to 4400	4400 to 4600	4600 to 4800	4800 to 5000	5000 to 5200	5200 to 5400	5400 to 5600	5600 to 5800	5800 to 6000	6000 to 6200	6200 to 6400	6400 to 6600	6600 to 6800	6800 to 7000	7000 to 7200	7200 to 7400	7400 to 7600	7600 to 7800	7800 to 8000	8000 to 8200	8200 to 8400	8400 to 8600	8600 to 8800	8800 to 9000	9000 to 9200	9200 to 9400	9400 to 9600	9600 to 9800	9800 to 10000	10000 to 10200	10200 to 10400	10400 to 10600	10600 to 10800	10800 to 11000	11000 to 11200	11200 to 11400	11400 to 11600	11600 to 11800	11800 to 12000	12000 to 12200	12200 to 12400	12400 to 12600	12600 to 12800	12800 to 13000	13000 to 13200	13200 to 13400	13400 to 13600	13600 to 13800	13800 to 14000	14000 to 14200	14200 to 14400	14400 to 14600	14600 to 14800	14800 to 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24	Suggested Bonnet Press.	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10																																																																			



## Refrigeration Problems and their solution

by Paul Reed

For Service and Installation Engineers



Paul Reed

### Service Trouble on 'F-22' vs. 'F-12'

#### LETTER

I have been reading AIR CONDITIONING & REFRIGERATION NEWS for years, and I have got a lot of help from it on both sales and service. I have six servicemen, and they are good ones too, so ordinarily we are able to take care of almost any service trouble that we run into.

Right after the war, when "Freon-22" came out, we had an awful lot of trouble with it. We are still having more trouble with jobs charged with "Freon-22" than those charged with "Freon-12," although it is not as bad as it was.

It's spotty though. We have lots of "Freon-22" jobs that give us no trouble at all; but in going over our service records, I find that the proportion of trouble on "Freon-22" jobs is greater than on "Freon-12" jobs of the same types.

I haven't made a thorough tabulation and analysis, but the percentage of leaks appears to be greater on "Freon-22" than "Freon-12." Also we seem to have more motor trouble and replace more "Freon-22" motor-compressors than "Freon-12," and this is particularly true on window units.

It varies a good deal as to the makes too, especially on freezers. It sounds rather odd, but we do not seem to have much trouble on the small household "F-22" freezers of most makes, but we have a lot of trouble on the larger sizes of "F-22" freezers of the same makes.

I can understand why, because of the higher pressures, we should have more leaks and motor trouble on "Freon-22" than "Freon-12," but some of the other things don't seem to make sense to me. Can you throw any light on this?

#### ANSWER

Your letter is typical of the general reaction of the field on the comparative trouble with "Freon-22" ("Genetron-141") and "Freon-

12" ("Genetron-12"). Some manufacturers report that they have no more trouble with "Freon-22" than "Freon-12." Others are not so happy. Still others find they get along fine with "Freon-22" on some models, but not on others.

The reactions of the men in the field are also mixed. Some say that they don't seem to see much difference in the amount of trouble that they have on "Freon-22" and on "Freon-12" jobs. Others, and these seem to be in the majority, feel much as you do, that their percentage of trouble is greater on "Freon-22" installations than on those charged with "Freon-12."

#### QUESTIONS ON "F-12" VS. "F-22"

Are there any reasons for these seeming inconsistencies? Can we expect more leak trouble with "Freon-22" than with "Freon-12"? Why should there be more motor trouble with "Freon-22" than "Freon-12"? Why do you have to replace more motor-compressors on "Freon-22" than on "Freon-12" systems?

It is not unusual to find more trouble on one make of equipment than another, but is there any reason why, on the same make there should be a difference in the trouble on one model and another model—trouble that can be traced to any differences in the characteristics of the two refrigerants?

Does the manufacturer in his factory, and the service engineer in the field, need to take additional precautions on "Freon-22" equipment, that he does not have to take on "Freon-12" equipment? If so, what are these additional precautions?

Can the service engineer in the field normally expect more trouble with "Freon-22" equipment than with "Freon-12" equipment? If so, is there enough difference in service cost to warrant a difference in free service allowances for "Freon-22" equipment over "Freon-12" equipment of the same type and size?

Perhaps the best way to answer these questions is to study the differences in characteristics of these two refrigerants; that is, those characteristics that would seem to have a bearing on service trouble. Let's see what such a study will indicate; and the reader can then draw his own conclusions.

#### EARLY MIS-APPLICATIONS

When, just after World War II, "Freon-22" came to be widely used, particularly in food freezers and other low temperature equipment, there was a great deal of mis-application of "Freon-22." This was true of both manufacturers and of people in the field.

Perhaps the outstanding mis-application was in connection with displacement and motor loading.

The same compressor, either hermetic or open type, and running at the same r.p.m., has a capacity of about 60% greater using "Freon-22" than using "Freon-12."

This additional capacity requires an increase in horsepower and wattage in about the same proportion. In those early days of widespread use of "Freon-22," proper consideration was not given to increasing the size of the motor in proportion to the increase in compressor capacity due to the use of "Freon-22" instead of "Freon-12."

Electric wire sizes, fuses, and controls must also be increased in capacity and size, in proportion to the increased motor loading, and many times these were overlooked. Motors were so heavily overloaded that they burned out. Circuits overheated, fuses blew, and control contacts fused and stuck.

At first there were few, if any, compressors designed "from scratch" for "Freon-22." Most manufacturers made revisions in their "Freon-12" compressors by changing valve and port sizes and in a few other more or less minor designs. Larger motors were applied to take the additional overload.

But in many instances, no changes were made to compensate for the additional bearing loading when using "Freon-22," and little or no additional surface was given to the compressor body to enable it to dissipate the additional heat of compression.

There was insufficient knowledge of oil and "Freon-22" mixtures and how the oil behaved throughout the "Freon-22" system. For several years, there was little information on the proper sizes of liquid, suction, and discharge line sizing for "Freon-22."

Most of these conditions have now been corrected. Equipment is now available that was designed specifically for use with "Freon-22." There is much more general knowledge of the oil cycle for "Freon-22" and of line sizing and lay-out.

#### WILL ASSUME BETTER APPLICATION AND DESIGN

In our study, we will therefore assume that we are not dealing with these earlier mis-applications; that, in general, the equipment is actually designed for use with "Freon-22," and is not "Freon-12" equipment inadequately converted to the use of "Freon-22."

In making this general assumption, however, we are not assuming that the manufacturer has succeeded in making a perfect "Freon-22" job; that he may have overlooked certain differences in characteristics of the two refrigerants, and failed to make adequate provision in the design and construction of the "Freon-22" equipment.

(To Be Continued)

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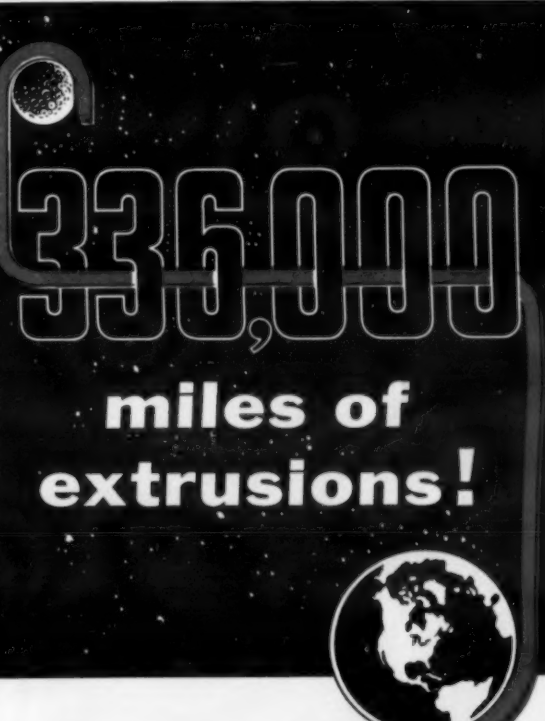
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FIG. 1—J. H. White shows Bob Denum how to make voltage check at one of two elaborate test boards used by Sealed Units, Inc., to diagnose service difficulties.

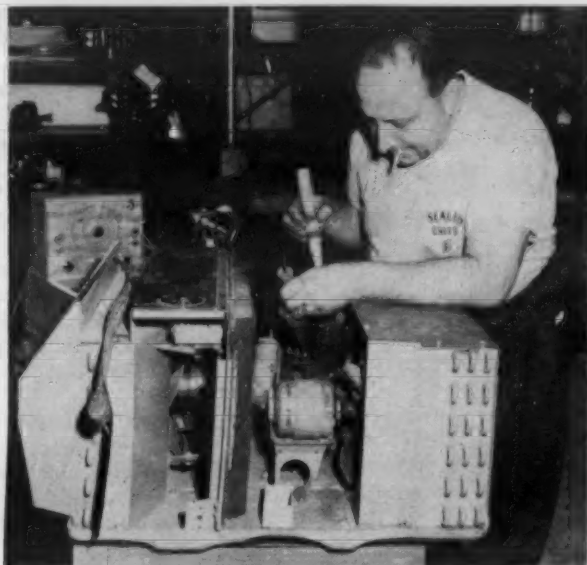


FIG. 2—Special wooden handles with pushbutton ensure safety in high-voltage test for grounds.



FIG. 3—Condition of fan blades while running is examined with Strobolac, which "stops" the fan even though running at full speed.

## Modern Hermetic Rebuilding Plant Helps Operator To Accomplish 'the Impossible' (1)

By C. Dale Mericle

ST. PETERSBURG, Fla.—What is probably the most modern and completely equipped private plant for the repair and rebuilding of hermetic unit systems was recently opened by Sealed Units, Inc., here.

The company is headed by James H. "Hans" White, long prominent

in the refrigeration industry who for years operated a similar plant in Brooklyn, N. Y.

Forced to move south because of his health, White seized this an opportunity to build and equip a brand new plant from scratch, as it were, incorporating all the ideas and plans accumulated dur-

ing the years he was serving the New York City territory.

It's a pip.

Not only does White have every testing instrument and device on the market than can be profitably used in repairing hermetics, but he has some of his own development.

In fact, White employs some instruments and methods that many manufacturers forego, and in some

phases of repair operations succeeds in doing the impossible, or so many experts believe.

They don't believe, for example, even when watching it, that the vacuum system White designed for dehydrating systems will hold 50 microns or less vacuum for indefinite periods without the pumps running.

It does, though.

### Ideal Location

Sealed Units' new plant is a large, one-story concrete block building having more than 6,000 sq. ft. of extremely well lighted floor space. It's located on U. S. highway 19, just north of St. Petersburg, and close to Tampa and Clearwater. A large parking lot and private drive are convenient features.

"We chose St. Petersburg," White explains, "because of its central location among major cities within a 200-mile radius, and because an air cargo line to Central America, Aerovias Sud Americana, is located here. Much of our business will originate in Central and South America."

"Units received by air freight from these countries for repair can be returned well within the 30-day limit to avoid import-export duties, something most manufacturers cannot do."

"Many new dealers below the border were finding it less expensive to destroy units and install new ones rather than ship them to this country for repairs," White says. "We expect savings on this service to run as high as 75% because of our new plant here," he adds.

### Much of Rebuilding Is On Contract for Mfrs.

Sealed Units, as did its Brooklyn predecessor, operates on a wholesale basis only, much of its work being in-warranty repairs under contract with manufacturers.

Air conditioners, chiefly window units, comprise a large part of its business, but not exclusively so, for the company is prepared to handle, and does, every variety of equipment using a sealed hermetic system.

In addition, a separate entrance and section of the shop have been set aside for automobile air conditioning installation and repair services.

White believes this is the first such independent automobile air conditioning repair station in Florida.

Before starting his own business in New York City some years ago, White had spent 20 years with Frigidaire. He has also been active in various industry groups. For many years he was chairman of the National Code Regulations committee of the Refrigeration Service Engineers Society and was a member of the code committee of the City of New York.

He is now a member of the American Standards committee and is currently helping organize a Florida section of the American

Society of Refrigerating Engineers.

Probably the most logical way to describe the equipment and test devices and methods employed in the Sealed Units plant would be to trace the course of a window unit, say, that has come in for repair.

Thoroughness of White's planning is evident the moment a truck backs up to the receiving entrance. A portable roller conveyor is wheeled up to the truck platform and locked in position.

The crated unit is placed on the conveyor rack, rolling slowly down to the other end. A brake arrange-

This is Part One of a three-part article describing a modern hermetic rebuilding plant and its operation. The plant reported on was built by James H. "Hans" White, a veteran in the field.

ment at the low end of the conveyor slows it down, and extra rollers at this end almost automatically help ease the unit onto a dolly.

### Dollies Used Instead Of Conveyor Lines

White, incidentally, feels rather strongly about using dollies as opposed to conveyor lines.

"In a production line for new systems a conveyor line is okay, but in a re-operation plant a conveyor line is not a space-saving setup. It can prove expensive, too," he claims.

"Re-operation of units is not all alike. Some units will go only to the electrical repair station. Others are sent to the refrigeration station. Some have to be repainted, others do not."

"Also, it is impossible for a repair station on a conveyor system to have every replacement part that might be needed in stock, especially in the busy season. Lack of a needed part would mean the unit would have to be pulled off the conveyor line and then later put back on when the repair part arrived."

"Dollies avoid this and other problems," White emphasizes.

The dollies, as can be seen in some of the accompanying photographs, are constructed of wood, mostly 2 by 4's, and are fitted with rubber ball-bearing casters. A lower shelf is provided in each dolly to hold the repair parts that will be needed for the unit.

"Being made of wood and rubber wheels, the dollies simplify checking units on them for electrical shorts," White also points out. "With a metal conveyor rack, it would be necessary to have an insulating board between the unit and conveyor for this test."

"A unit is never removed from the dolly from the time it comes in off the truck until it is ready to leave the shop," White explains. "One man can unload and load units. For uncrating and re-crating units we have an electric chain

(Continued on next page)

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## Hermetic Rebuilding Plant--

(Continued from preceding page)

hoist which raises or lowers the units," he adds.

"This setup does require a lot of dollies and they do cost money," White admits, but he insists the total cost of dollies is no more than a conveyor system, besides offering all the advantages he notes above.

At present there are 50 dollies in the Sealed Units plant, and White plans to add 50 more shortly.

### Control Number Attached As Unit Comes Off Truck

As soon as a unit is placed on a dolly after being unloaded from a truck, a tag with a control number is wired to it. This is part of the simplified record system developed by White which will be described in detail later.

First step is then to wheel the unit into a spray booth where it is cleaned by "dusting" with compressed air maintained at 125 p.s.i.g.

The spray booth (so called because it's also used for painting) is fitted with an exhaust fan driven by a 1-hp. motor with a capacity of 6,000 to 8,000 c.f.m.

Purpose of the powerful exhaust fan, of course, is to pull the dust (or paint fumes) out of the building immediately so that it won't contaminate the air in the shop.

### Color-Coding Indicates Voltage

After this initial cleaning, the unit is moved over to one of two electrical test boards. (See Fig. 1). First step here is to color code the plug of the unit to indicate whether it's a 115-volt system or 230 volts.

Entire Sealed Units shop is color coded. Green electrical outlets are 115 volts; red are 230 volts.

Tools used in the shop are likewise color coded.

"This is to keep them at the bench or station where they belong," White explains.

"All tools used for testing are painted red. Those used for refrigeration are blue, while those needed for work on electrical parts of units are green. Heavy tools for general use are not colored."

Each of the two test boards is wired with two sets of outlets, so that two units can be tested at a time on each board.

"It takes about 10 minutes for a unit to come up to refrigerating capacity," White says. "With this arrangement while one unit is being tested the other is running to come up to capacity."

### Initial Testing Requires About 10 Minutes

Since most initial testing takes about 10 minutes, the second unit is ready for testing when testing of the first one is completed.

Success of any service operation depends on a correct diagnosis of the trouble or troubles. Purpose of the test boards designed by White is to permit a quick and accurate diagnosis of the unit so that the proper repairs can be made.

Each test stand has a 28 amp. variac to permit controlled voltage output over a range of 0 to 300 volts at 28 amps. A high amperage switch arrangement permits the unit to be changed from running through the variac to direct line voltage with the flick of a toggle switch.



FIG. 4—Rapidly vibrating reed of Frahm tachometer shows compressor motor is running at 1,750 r.p.m.

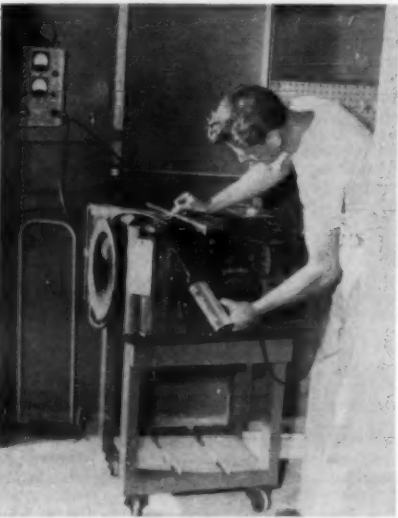


FIG. 5—Units are checked for leaks with G-E electronic "sniffer" by Fred Sprague in special leak detector room.

Both 115 and 230-volt outlets are provided on each test stand. Both two and three-prong receptacles in different sizes are used throughout the shop in addition to a special receptacle that will take either two or three-prong plugs.

"At every point in the shop where a unit might be plugged in there is a receptacle of 115 and 230 volts that will take any type plug now in use," White comments.

### Each Test Stand Has 2 Ammeters

On each test stand panel are two ammeters, one for direct reading and the other for the variac, and two voltmeters. One of the latter goes up to 350 volts and indicates the voltage being supplied through the variac. Other voltmeter registers up to 500 volts. "Latter is used to check voltage output across the running and starting windings while the unit is in operation," White explains.

The output will vary from 140 to 360 volts, depending on the capacity of the unit, make, and model. It serves as a good check on the unit's operation.

Provided also at each test stand is a four-prong test cord equipped with alligator clips. This is connected to the variac and is used to test the hermetic unit without the other electrical components—relay and running and starting and running capacitors—in the system. Test cord is wired through a capacitor.

Insulated prong of the test cord automatically discharges starting capacitors after the test.

Each test stand, which incidentally is fitted with a fluorescent light, is electrically protected with automatic resetting circuit breakers as are the variacs. Latter weighs 110 lbs.

A cabinet is provided beneath each test stand to hold folders containing test data on all units. Performance of the units is checked

against official factory data as an aid in diagnosing service troubles.

What are some of the diagnostic tests made at this point?

"Here," White explains, "we test the amperage while the unit is running. This will show if both compressor and fan motor are operating properly."

"Low amperage could mean a leak while very low amperage could indicate an undercharge of refrigerant or simply an inefficient compressor."

A check is also made with the 500 voltmeter of the voltage across the running and starting winding terminals.

"If this comes up to specification, and the unit will start up at 10% below or 10% above rated voltage with only a very slight increase in running amperage, we can assume that the relay and starting capacitor work properly."

"If the voltage reading across the running and starting winding terminals is okay but the unit won't start properly at low or high voltage, this means that the relay and/or capacitor are not okay. Only then," White says, "do we have to check the relay and capacitor separately."

### Low Voltage Condition

"We found years ago in our Brooklyn operation that we received many machines for repair with which we couldn't find anything wrong, and so we turned them back to the owner. The latter would continue to complain that the machine was still cutting out."

"That was because he was getting a low voltage condition. By making a low voltage test ourselves, we can determine if that's the cause of the machine's not operating properly. Low voltage, of course, may be the result of faulty house wiring," White points out.

Checking of the relay and capacitor are made at a separate bench. The capacitor is tested with an Elco tester (Model 950B).

The relay is checked by applying the proper voltage, which can vary from 130 to 360 volts according to the model.

Inoperative relays and/or capacitors, of course, will be replaced.

Another test made at this point is for electrical grounds, using 1,000 volts. Test prongs for this high voltage check are enclosed in heavy wooden handles to protect the operator.

For further protection, one of the wooden handles, devised by White, has a conveniently located button operated by the thumb (see Fig. 2) to turn the current on and off momentarily for the electrical short test.

### Pilot Light Indicates Presence of Short

A pilot light indicates a short.

"By the way," cautions White, "in using high voltage to check for grounds, don't make this test with the unit under a vacuum. A vacuum will let high potential current jump and this may result in the burnout of a perfect winding."

Two other extremely useful instruments are employed in diagnosing service complaints. One is a Strobotac (Type 631-BL, made by General Radio Corp.) stroboscope. Although this can be used to determine accurately the speed of a revolving part, such as in fans, its chief use in the Sealed Units plant is to inspect fan blades while the fan is running. (See Fig. 3.)

By "stopping" the fan while it is in motion, the Strobotac permits visual inspection of each fan blade, for example, with the fan running at full speed.

Another instrument, simpler than the Strobotac, can be used to check the speed of the fan motor or compressor motor. This is the Frahm tachometer. (See Fig. 4.)

Latter is an ingenious device consisting of 42 small metal reeds, each of which is "tuned" to vibrate



## Service & Supplies

at a difference frequency, corresponding to the r.p.m.'s of the device being tested.

The white-tipped reeds are housed in a small, metal case with a glass front and scale reading in increments of 25 r.p.m. Attached to the back of the case is a metal prong about a foot long.

To use the tachometer, the metal prong is held firmly against the shell of a motor-compressor, say, and the vibrating reeds are observed. Although it sometimes takes a moment or the reeds to "settle down," almost immediately one reed will be seen vibrating so fast that it's almost indistinguishable. This one shows the r.p.m. of the motor.

### Employees Know What Is Needed After Test

At the conclusion of these tests, which usually require about 10 minutes, Sealed Units employees know what has to be done to the unit. Replacement parts needed are noted on the back of the control ticket (attached to the unit when first received) and are taken out of the stockroom. These replacement parts are placed on the lower shelf of the dolly.

Before going to the repair sec-

tion of the shop, the unit is wheeled into a special leak test room for checking with a G-E electronic leak tester.

This room is kept under a positive pressure by a blower bringing in fresh air.

"Maintaining a positive pressure with fresh air prevents the leak test room from becoming contaminated with refrigerant which might be present in the air of the shop," White says.

The leak detector is so sensitive that without the fresh air under pressure, it would probably sound off at the least presence of "Freon" almost anywhere in the shop, he adds.

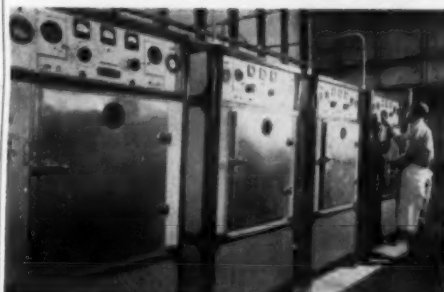
The leak test room is set up with the G-E "sniffer gun" hanging on the wall, directly beneath the fresh air intake. Normally, the leak detector will sound the alarm immediately when a "leaker" is wheeled into the room.

If this happens, the worker then goes over the unit carefully with the sniffer (Fig. 5) to spot the exact location (or locations) of the leak. This point is marked with a dab of red nail polish, which dries very quickly.

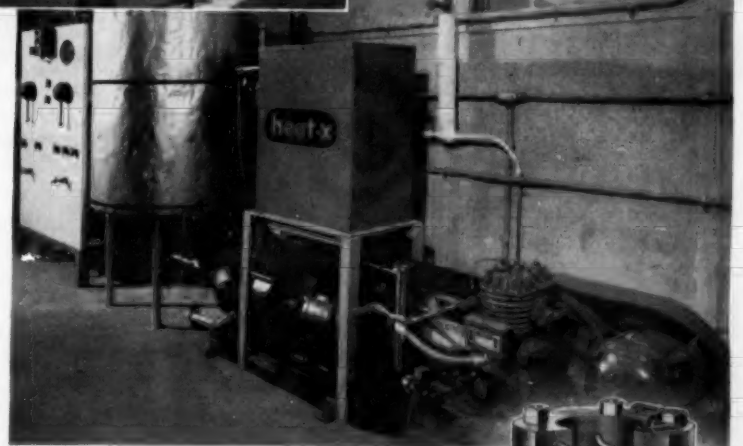
(To Be Continued)

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## Johns-Manville maintain High Quality



"Weather chambers" at Johns-Manville in which building materials are subjected to "break-down" environmental testing.



Cut-away view of Heat-X Liquid Cooler

Heat-X Liquid Coolers supply chilled water to the "weather chambers" used for testing building materials at the Johns-Manville Research Center . . . another in a long list of applications for versatile, reliable Heat-X refrigeration equipment.

Heat-X Liquid Coolers, especially designed for heavy-duty applications, are combinations of individual cast aluminum coolers. Each individual cooler consists of separate liquid and refrigerant coils cast in a solid block of aluminum. Tremendous strength of the casting guards against possible damage from freeze-up . . . assures continuous satisfactory operation.

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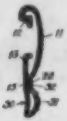
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# PATENTS

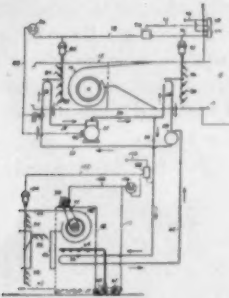
Week of February 22

**2,702,415. REPLACEMENT GASKET FOR REFRIGERATOR DOORS.** William Wagner, Brooklyn, N. Y. Application May 2, 1950, Serial No. 159,594. 1 Claim. (Cl. 20-89.)



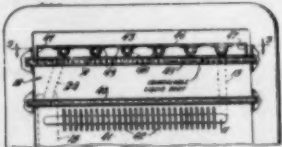
In combination, a refrigerator door gasket comprising a longitudinally extending web which is secured to the refrigerator door and a longitudinally extending flange which is integral with said web, and a replacement gasket comprising a longitudinally extending bead having a base portion which is adapted to be placed against the refrigerator door immediately adjacent the flange of the refrigerator door gasket and a longitudinally extending lip which is integral with said bead in offset relation to the base of the bead, the base of the bead and the flange of the refrigerator door gasket occupying a common plane and being in abutment with each other and disposed flat against the refrigerator door, said lip being disposed upon and in abutment with said refrigerator door flange, and adhesive means holding said replacement gasket in place relative to said refrigerator door gasket.

**2,702,456. AIR CONDITIONING SYSTEM.** Clarence L. Ringquist and Robert G. Miner, La Crosse, Wis., assignors to The Trane Co., La Crosse, Wis. Application Aug. 31, 1953, Serial No. 377,378. 4 Claims. (Cl. 62-6.)



1. Apparatus for conditioning air for an enclosure comprising an evaporator, a condenser, a compressor for moving refrigerant from the evaporator to the condenser, said condenser having primary and secondary elements connected in parallel relation, means for circulating a fluid in heat exchange relation with said secondary element of said condenser, means for moving air for the enclosure, first over said evaporator, then over the primary element of the condenser and then into the enclosure, means for bypassing part of the air around said evaporator, and means responsive to the temperature of the air of the enclosure for controlling the damper means.

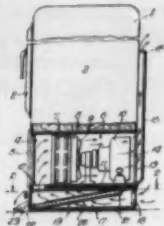
**2,702,457. EVAPORATOR STRUCTURE IN ABSORPTION REFRIGERATION.** Wilhelm Georg Kogel, Stockholm, and Gunnar Axel Grubb, Bromma, Sweden, assignors to Aktiebolaget Elektrolux, Stockholm, Sweden, a corporation of Sweden. Original application Feb. 26, 1946, Serial No. 78,502. Divided and this application Aug. 23, 1952, Serial No. 305,966. Claims Priority, application Sweden March 2, 1948. 5 Claims. (Cl. 62-95.)



1. In a refrigerator comprising a cabinet having a thermally insulated interior divided into a freezing compartment and a higher temperature food storage compartment, and absorption refrigeration system of the inert gas type having a circuit for circulation of inert gas therethrough comprising evaporator structure including a low temperature evaporator arranged to produce a refrigerating effect in said freezing compartment and a higher temperature evaporator arranged to produce a refrigerating effect in said food storage compartment, means for supplying liquid refrigerant to said evaporators for evaporation therein in the presence of the circulating inert gas to produce said refrigerating effects, and means

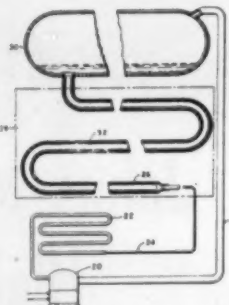
for distributing the refrigerating effect capable of being produced by said evaporator structure during operation of the system, said distributing means including a cold accumulator heat conductively connected to said low temperature evaporator, said cold accumulator containing a fluid whose temperature becomes reduced during periods of low load to produce a source of supply of refrigeration which is available upon increase in load on said low temperature evaporator during operation of the system to reduce the quantity of liquid refrigerant necessary in the latter to satisfy such increased refrigerating load and increase the quantity of refrigerant immediately available in said higher temperature evaporator.

**2,702,459. FILTER FOR AIR COOLING SYSTEMS OF REFRIGERATORS.** Arthur M. Thompson, Chicago, Ill. Application Feb. 9, 1952, Serial No. 270,794. 3 Claims. (Cl. 62-117.4.)



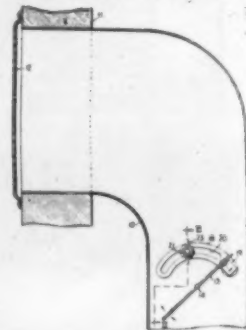
1. In a refrigerator arranged to house the operating mechanism thereof in a chamber at the bottom of the unit, said chamber having a mechanism cooling air inlet at one end and an air discharge outlet at the other end thereof to expel air into the ambient atmosphere of the unit, the improvement which comprises an air duct structure underlying the mechanism chamber adjacent the floor and having communication with said air inlet of said chamber, an air intake in said air duct structure adjacent the floor, and air filter means carried within said duct structure to clean cooling air passing from the adjacent floor zone through said intake and into said air inlet of said mechanism chamber.

**2,702,460. REFRIGERANT EVAPORATING MEANS.** Richard S. Gaugler, Oakwood, Ohio, assignor to General Motors Corp.



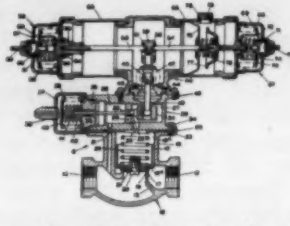
1. Refrigerant evaporating means including means forming an elongated refrigerant passage, refrigerant compressing and condensing means for feeding liquid refrigerant substantially into one end of said passage and withdrawing evaporated refrigerant substantially from the other end of said passage, said means forming said passage being arranged in convolutions with turns, and a flexible metal member extending within the passage continuously throughout a major portion of said convolutions including at least some of the turns closely adjacent the walls of said refrigerant passage for guiding the primary flow of evaporated refrigerant away from the walls of the refrigerant passage for protecting the film of liquid refrigerant clinging to the walls, said flexible metal member occupying only the outer region of said passage whereby the central portion of said passage provides for unobstructed flow of refrigerant therethrough.

**2,702,504. AIR DUCT CONTROL MEANS.** Joseph R. Guldorf, Buffalo, N. Y.



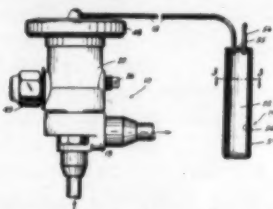
1. Air flow regulating means for a rectangular ventilation duct comprising a damper plate and means mounting said plate in said duct for pivotal movement about a transverse axis, a locking plate fixed to a side edge of said damper plate at a point spaced from said transverse axis, said locking plate lying adjacent to an interior wall of said duct in a plane at right angles to said pivot axis, said locking plate having an arcuate slot therein generally concentric with said transverse axis, a screw element fixed to said duct and extending through said arcuate slot, and locking means comprising a thumb nut engaging said screw means to selectively clamp the same in selected positions relative to said arcuate slot.

**2,702,571. DIFFERENTIAL TEMPERATURE VALVE WITH PRESSURE OVERRIDE.** Franklyn Y. Carter, Dearborn, Mich., assignor to Detroit Controls Corp., Detroit, Mich.



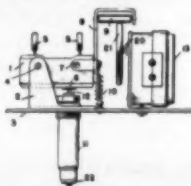
1. In a valve of the character described: a main valve casing having an inlet, an outlet, a valve port, and a valve chamber overlying said port; a main valve member movable in said chamber to open and to close said port; a pilot valve casing carried on said main valve casing and closing said valve chamber, means including said valve casings forming a passage-way extending from said valve chamber to the outlet of said main casing, a valve seat in said pilot casing forming a valve port controlling said passage-way, a pilot valve member movable in said passage-way to open and to close said last-named valve port, thermostatic means carried on said pilot casing and connected to and operable to move said pilot valve member, and pressure responsive means carried on said pilot casing and connected to said pilot valve member in opposed relation to said thermostatic means and operable to override the same to open said pilot valve.

**2,702,723. CONSTANT SUPERHEAT TIME LAG EXPANSION VALVE.** Franklin M. MacDougall, Kirkwood, Mo., assignor to Alco Valve Co., University City, Mo.



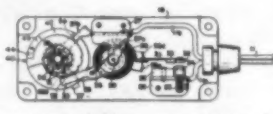
1. In a thermostatically operated device, an expansible chamber having a movable wall, a temperature sensing bulb, a tube connecting the bulb and the chamber into a closed system, a vaporizable thermal fluid in the system, said fluid being at least partially condensed at the low temperature range to which said sensing bulb is subjected, and fluid contacting insulating material disposed around the inner surface of the bulb in the form of a lining, said lining being of a thickness substantially less than the radius of the bulb to provide an open space in the interior of said bulb, the insulating material being of a kind having closely associated component parts providing small, fluid-permeable interstices, and being insoluble in the thermal fluid.

**2,702,943. PROPORTIONAL-TIME TEMPERATURE CONTROLLER.** John G. Taylor, West Lafayette, Ind.; dedicated to the free use of the People in the territory of the United States.



3. A proportional-time temperature controller comprising a thermostat, adjustment means on the thermostat to select the temperature setting, a rotatably mounted switch having mechanical means thereon to bring said switch into operative relationship with said thermostat, a cam follower mounted on the body of the switch, a rotatable cam adapted to contact said cam follower and rotate the body of the switch through a predetermined angle for a predetermined proportion of the cycle of cam rotation, whereby the switch is periodically brought into and taken out of operative relationship with the thermostat, means for permanently keeping the cam follower in contact with the cam, means for rotating the cam, and means for adjusting the position of the cam relative to the switch in the plane of rotation of the switch body whereby the angle through which the switch body rotates during a cycle of operation may be varied.

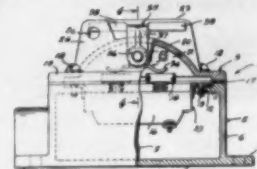
**2,702,944. THERMOSTAT.** Carl G. Kronmiller, Edina, Minn., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.



1. A control device comprising, a support, a cam member carried on said support for both pivotal and axial movement with respect thereto, a thermostat on said support, a spiral cam surface on said cam member, a cam follower interconnecting said thermostat and said spiral surface so that the angularly adjusted position of said cam member determines the control point of said thermostat, a dial on a surface of said cam member substantially normal to its rotational axis, said support

having a portion disposed adjacent the periphery of said dial and an index cooperating with indicia on said dial, a helical surface on said cam member adapted to engage a portion of said support to retract said dial axially with respect to the portion of said support adjacent said dial on rotation of said dial to a predetermined angular relation to said support.

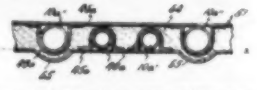
**2,702,945. HOUSING FOR MANUALLY ACTUATED SWITCHES.** Woodrow A. De Smidt, Whitefish Bay, Wis., assignor to Allen-Bradley Co., Milwaukee, Wis.



1. In an enclosed switch an enclosure and an actuating means therefor comprising in combination a housing, an outwardly projecting wall portion forming a part of said housing having an outwardly convex face, a rotatable operating shaft extending through said outwardly projecting wall portion having an internal portion within said housing and an external portion without said housing, a switch operating lever mounted on said internal portion of said shaft adapted to operate, engage a switch mounted within said housing, and a manually engageable member mounted upon said external portion of said shaft having a shank portion extending backwardly to overlie said outwardly convex face and the internal portion of said shaft and a pair of finger seat arms extending laterally with respect to said shaft from opposite sides of the backwardly overlying shank portion overhanging a major area portion of said convex face adapted to be alternately moved inwardly toward said convex face whereby rotation of said operating shaft is effected and each finger seat arm being disposed in close facing relationship to said convex face and normally spaced therefrom and deflectable into supporting engagement therewith upon application of abnormal operating force thereto.

Week of March 1

**2,702,990. ABSORPTION REFRIGERATION.** Wilhelm Georg Kogel, Stockholm, and Gunnar Axel Grubb, Bromma, Sweden, assignors to Aktiebolaget Elektrolux, Stockholm, Sweden, a corporation of Sweden. Continuation of application Serial No. 78,502, Feb. 26, 1946. This application Dec. 6, 1952, Serial No. 324,530. Claims priority, application Sweden March 2, 1948. 7 Claims. (Cl. 62-95.)



1. In a refrigerator comprising a cabinet having a thermally insulated interior, an absorption refrigeration system of the inert gas type including an evaporator in which refrigerant evaporates in the presence of an inert gas, said evaporator comprising a looped coil providing an elongated path of flow for fluids therethrough and in which practically all effective parts along the length thereof have a region in substantially the same single horizontal plane, said coil including a first portion in such horizontal plane in which refrigerant evaporates at a first average or mean temperature in the presence of the inert gas and a second portion in such horizontal plane in which refrigerant evaporates at a second higher average or mean temperature in the presence of the inert gas, a horizontal partition in the interior of said cabinet, means including one of said coil portions for effecting cooling primarily of matter above said partition, and means including the other of said coil portions for effecting cooling primarily of matter below said partition.

**2,702,991. REFRIGERATOR ICE TRAY.** Morris H. Foster, South Charleston, W. Va.

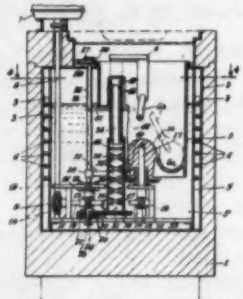


An ice tray including a tray proper and grid assembly comprising a plurality of flexible partition plates and a spacer strip extending longitudinally and adjacent to the bottom of said tray with a plurality of transversely extending spaces on the bottom of said tray and a thin covering strip extending longitudinally of said tray and adjacent to the bottom of and being an integral part of said spacer strip and said spacer strip being wide enough to prevent rotation of said flexible plates in a horizontal plane, a lever and plate assembly independent from said grid assembly comprising a handle adapted to extend over and rest upon a plurality of said plates and an angle plate forming part of said lever and plate assembly positioned substantially parallel to said plates first named with the bottom edge of said angle plate resting upon the end of grid assembly spacer strip, said angle plate having a triangular shaped divider plate mounted perpendicular to and on the plain surface of said angle plate whereby pivotal action of said angle plate will break the prism of ice between the end of the ice tray proper and said angle plate into more than one piece.

**2,702,992. FREEZING APPARATUS FOR PRODUCTION OF ICE CREAM.** Alfred Mooser, Bern, Switzerland.

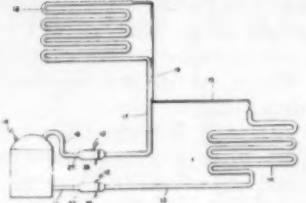
1. A freezing apparatus for the production of ice cream or the like, comprising a main tank for holding a cooling liquid therein, heat removing means mounted in said tank for cooling the cooling liquid in the latter, a refrigerating drum having an open end and rotatably mounted in said tank and adapted to receive a substance to be converted into ice cream; a spatula overhanging the open end of said drum and mounted for extension into and for movement axially of said drum, and drive means common to said drum and said spatula, said drive means being substantially located later-

ally of and below said refrigerating drum, said drive means further including a drive shaft, gear means mounted within said tank and connected to said drive shaft,



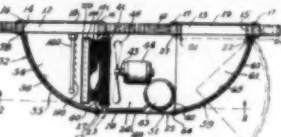
means operatively connecting said gear means with said spatula for transmitting motion to the latter, and transmission means mounted within said tank and connecting said drive shaft to said refrigerating drum for imparting rotation to the latter relative to said spatula.

**2,702,993. HERMETIC CONNECTOR.** Arvel B. Harris, Evansville, Ind., assignor to International Harvester Co.



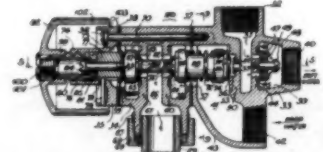
1. Means for connecting one portion of a refrigerating system containing a charge of refrigerant to another portion of a refrigerating system which comprises, an outer member adapted to be connected to one portion of a refrigerating system and an inner member adapted to be connected to the other portion of the refrigerating system, said inner member being provided with a central bore and having a fusible partition-like baffle disposed entirely within said bore and radially spaced from said outer member and arranged so as to obstruct the passage of refrigerant therethrough, and means longitudinally spaced from said baffle in said outer member to facilitate the evacuation of a portion of the refrigerating system.

**2,702,994. AIR CONDITIONING APPARATUS FOR BUILDINGS.** William F. Borgerd, Evansville, Ind., assignor to International Harvester Co., a corporation of New Jersey. Application June 20, 1951, Serial No. 322,493. 7 Claims. (Cl. 62-140.)



1. In combination with a building to be cooled, an air conditioning unit positioned between a first opening and a second opening provided in an outer wall of said building, said unit comprising a high side compartment having oppositely disposed open ends, one of said open ends being connected to said first opening by a first duct, the other open end being connected to said second opening by a second duct which is adapted to be moved away from the open end, said high side compartment being provided with a compressor, condenser and fan means for circulating outside air therethrough by way of said openings, a low side compartment having an evaporator secured therein over which air to be cooled is passed, and a door which is slidably secured in such a manner that it can be moved over said second opening when said second duct is rotated away from said open end so that fresh air will be circulated by said fan means through said first opening into said high side compartment and discharged therefrom into said building.

**2,703,106. MULTIWAY VALVE UNIT.** Theodore B. Stoner, Milwaukee, Wis. Application July 15, 1949, Serial No. 104,827. 8 Claims. (Cl. 137-625.12.)



1. A valve comprising a valve body having first and second chambers therein, said first chamber having a water supply inlet and first and second outlet valve ports, said second chamber having a drain valve port, said first valve port providing communication between said chambers, a first valve member for opening and closing said first valve port, a second valve member for opening and closing said second valve port, a third valve member for opening and closing said drain valve port, and a reciprocable valve stem with which said three valve members are movable, said second valve member having a limited axial lost motion connection with said valve stem and being spring-pressed in closing direction, said reciprocable valve stem at one end of its travel holding said first valve member open and said second and third valve members closed, and said valve stem at the other end of its travel holding said first valve member closed and said second and third valve members open.

(To Be Continued)

Fedders Names Distributor

BUFFALO — Griffith Distributing Co., Indianapolis, has been appointed by Fedders-Quigan Corp. to handle the company's line of room air conditioners for that area, it was announced by Robert E. Cassatt, sales manager, refrigeration appliance division of Fedders.

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## Home Freezer Sales by 22 NEMA Firms Total 63,631 Units for March

Summary for March and First Three Months, 1955

Electric Farm and Home Freezers—Complete—Sales by Sizes—Units  
Farm and home freezers complete with high and low side and cabinet, where 50% or more of the net cabinet capacity is designed for freezing and/or storage of frozen foods.

Sizes	MARCH (22 Companies)			
	Domestic (48 States and D. C.)	Canadian	Other Foreign	Total
1. 6 cu. ft. and under				
Chest Models .....	*	*	*	*
Upright Models .....	†	†	†	†
2. 7 and 8 cu. ft.				
Chest Models .....	*2,428	*145	*161	*2,734
Upright Models .....	†181	†3	†6	†190
3. 9 and 10 cu. ft.				
Chest Models .....	1,305	62	103	1,470
Upright Models .....	‡	‡	‡	‡
4. 11.0 to 12.4 cu. ft.				
Chest Models .....	5,761	84	130	5,975
Upright Models .....	‡6,734	‡136	‡201	‡7,071
5. 12.5 to 14.4 cu. ft.				
Chest Models .....	4,878	325	106	5,309
Upright Models .....	5,739	95	331	6,165
6. 14.5 to 15.4 cu. ft.				
Chest Models .....	6,052	393	29	6,474
Upright Models .....	§	§	§	§
7. 15.5 to 17.4 cu. ft.				
Chest Models .....	6,750	89	17	6,856
Upright Models .....	‡8,060	‡151	‡62	‡8,273
8. 17.5 to 19.4 cu. ft.				
Chest Models .....	1,981	167	64	2,212
Upright Models .....	4,957	24	28	5,009
9. 19.5 to 21.4 cu. ft.				
Chest Models .....	3,715	146	19	3,880
Upright Models .....	**	**	**	**
10. 21.5 cu. ft. and over				
Chest Models .....	441	1	3	445
Upright Models .....	*1,568	*..	*..	*1,568
Total Chest Models ..	33,311	1,412	632	35,355
Total Upright Models ..	27,239	400	628	28,276
Total All Models .....	60,550	1,821	1,260	63,631

## SUMMARY FOR FIRST THREE MONTHS, 1955

Sizes	Domestic (48 States and D. C.)			
	Canadian	Other Foreign	Total	
1. 6 cu. ft. and under				
Chest Models .....	*	*	*	*
Upright Models .....	†	†	†	†
2. 7 and 8 cu. ft.				
Chest Models .....	*9,933	*421	*589	*10,943
Upright Models .....	†483	†21	†37	†541
3. 9 and 10 cu. ft.				
Chest Models .....	5,687	148	304	6,139
Upright Models .....	‡	‡	‡	‡
4. 11.0 to 12.4 cu. ft.				
Chest Models .....	16,674	221	380	17,275
Upright Models .....	‡18,522	‡556	‡431	‡19,509
5. 12.5 to 14.4 cu. ft.				
Chest Models .....	16,617	533	310	17,460
Upright Models .....	15,965	255	721	16,941
6. 14.5 to 15.4 cu. ft.				
Chest Models .....	15,832	500	114	16,446
Upright Models .....	§	§	§	§
7. 15.5 to 17.4 cu. ft.				
Chest Models .....	14,691	90	31	14,812
Upright Models .....	‡25,529	‡438	‡198	‡26,165
8. 17.5 to 19.4 cu. ft.				
Chest Models .....	5,940	346	152	6,438
Upright Models .....	12,408	86	134	12,628
9. 19.5 to 21.4 cu. ft.				
Chest Models .....	10,097	281	33	10,411
Upright Models .....	**	**	**	**
10. 21.5 cu. ft. and over				
Chest Models .....	1,465	22	11	1,498
Upright Models .....	*4,094	*3	*..	*4,097
Total Chest Models ..	96,936	2,562	1,924	101,422
Total Upright Models ..	77,001	1,359	1,521	79,881
Total All Models .....	173,937	3,921	3,445	181,303

\*Chest models for items 1 & 2 combined because of possible disclosure of individual company data.

†Upright models for items 1 & 2 combined because of possible disclosure of individual company data.

‡Chest models for items 3 & 4 combined because of possible disclosure of individual company data.

§Upright models for items 6 & 7 combined because of possible disclosure of individual company data.

\*\*Upright models for items 9 & 10 combined because of possible disclosure of individual company data.

Participating companies: Admiral Corp.; Appliance & Electronics Div., Avco Mfg. Corp. (Crosley & Bendix Divs.); Ben-Hur Mfg. Co.; Carrier Corp.; Deepfreeze Appliance Div., Motor Products Corp.; Frigidaire Div., General Motors Corp.; General Electric Co.; Gibson Refrigerator Co.; Hotpoint Co., Div. of General Electric Co.; International Harvester Co.; Kelvinator Div., American Motors Corp.; Maytag Co., The; Norge Div., Borg-Warner Corp.; Philco Corp., Appliance Div.; Quicfrez, Inc.; Revco, Inc.; Seeger Refrigerator Co.; Servel, Inc.; Sub-Zero Freezer Co., Inc.; Victor Products Corp.; Westinghouse Electric Corp.; Wilson Refrigeration, Inc.

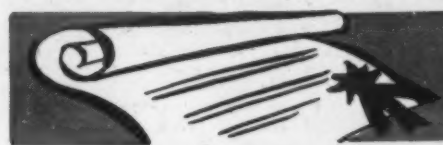
## Central Air Conditioning & Heating Names Fox

NASHVILLE, Tenn.—Joseph S. Fox, air conditioning engineer at Arnold Engineering Development center at Tullahoma, has been named manager of the wholesale operations of Central Air Conditioning & Heating, Inc.

W. E. McLeod, president of Central Air Conditioning, said Fox will work directly with all authorized Chrysler Airtemp dealers in middle Tennessee to assist in building

service and engineering organizations.

Fox, a native of Alabama, is a graduate of Chrysler Corp.'s air conditioning engineering school. He has designed many unusual jobs in this country, and in Panama and Puerto Rico, including office buildings, refrigerated ships, high altitude test chambers, cold storage plants, and tropical storage rooms.



## Government Contracts

Description	Quantity	Invitation No.	Opening Date
Base Purchasing Office, Marine Corps Base, Camp Pendleton, California	7 ea.	156-55-B	15 Jun 55
Refrigeration equipment	Var.	(MDW-49-165-55-50)	10 Jun 55
Walter Reed Army Medical Center, Washington, D. C.			
Cases, display, frozen food and dairy refrigerated open style type.			
San Francisco District, Corps of Engineers, U. S. Army, 180 New Montgomery St., San Francisco, California			
Air conditioning building 49, Benicia Arsenal, Benicia, California		(ENG-04-203-55-18B)	16 Jun 55
Commanding General, Ordnance Tank Automotive Command, 1501 Beard, Detroit 9, Michigan	5	55-1212-B	11 Jun 55
Semitrailer Van Refrigerated, 20 Ton.			
Purchasing and Contracting Office, Fort Leavenworth, Kansas			
Conversion of chill room to freezer room, building No. 245, Fort Leavenworth, Kan.		(AV-14-021-55-70B)	7 Jun 55
Galveston District, Corps of Engineers, P.O. Box 1229, Galveston, Texas			
Modification and air conditioning of bldg. 4011, San Antonio Genl Depot, Texas.		Eng-41-243-55-76-B	22 Jun 55
Work to consist principally to the modification to existing bldg. 4011 including aluminum siding, wall insulation and vapor barriers, interior walls and floors, new toilets and related work, approx. 250 tons air conditioning, interior elec system will be replaced, outside utilities will include water, sanitary sewers, and underground electrical work including transformers.			
Purchasing and Contracting Office, George Air Force Base, Calif.			
Install evaporators and ducts in bldg. Nos. S-34, S-211, S-402, S-401, S-244, S-311, S-641, S-702, S-712, and S-727.		55-60-B	17 Jun 55
Officer in Charge, Navy Purchasing Office, 180 New Montgomery St., San Francisco, California			
Refrigerators, household type not less than 10 cu. ft., not more than 11 cu. ft., similar and equal to KS110 Kelvinator.	185 ea.	IFB-220-15169-55-P2-B	9 Jun 55
Freezers, food, household type horizontal, approx. 36" high, 37 1/2" wide, 29-5/16" deep similar and equal to model 80 Amara.	125 ea.	"	"
District Public Works Office, Sixth Naval District, Naval Base, Charleston, South Carolina			
Automatic temperature control Job for heating systems, Naval Supply Schools, Athens, Ga.		47193B	21 Jun 55

Replacement of brine refrigeration system, Bldg. No. 100 Navsta (36 235-Fla).	Job	45788B	21 Jun 55
Contracting Office, Smoky Hill Air Force Base, Salina, Kansas			
Air conditioning 40th Wing Headquarters Bldg. No. 948 (2-story) at Smoky Hill Air Force Base, Salina, Kansas.	Job	(IFB 14-612-55-71B)	8 Jun 55
District Public Works Office, Eleventh Naval District, San Diego, California			
Expand and air condition TP exchange building, Marine Corps Base, Camp Pendleton, Calif.	Job	47916 B	14 Jun 55
Commandant of the Marine Corps, Washington, D. C.			
Attn: Sup. Dept. Procurement Section			
Air conditioning units, room, 310 ea.		323 B	8 Jun 55
electric, motor-driven, self-contained, window mounted complete with adjustable adapters, type I, in accordance with Federal Spec. 00-A-372, and Amendment I.			
Officer in Charge, Navy Purchasing Office, Los Angeles, California			
Refrigerators, electric, self-contained, 9 cu. ft. Federal Specs. AA-R-211C Amendment I.	278 ea.	(IFB-123-399 55B)	14 Jun 55
Erie Ordnance Depot, Lacarne, Ohio. Attn: Gen. Procurement Office			
Install constant temperature and humidity control equipment bldg. No. 207, Erie Ord Depot.	Job	33-066-55-68-B	16 Jun 55

## GENERAL SERVICES ADMINISTRATION

Description	Quantity	Reference No.	App. Bid Date
General Services Administration, Business Service Center, 7th & D Sts., Washington, D. C.			
Condensing unit.	2 ea.	4H-62007-R	14 Jun 55
Evaporator.	1 ea.	4H-62007-R	14 Jun 55
Business Service Center, General Services Administration, Region IV, 50 Seventh St., N.E., Atlanta, Georgia			
Installing new air conditioning units on second floor, U. S. Post Office and Court House, Atlanta, Ga.	Job	CR4-987	14 Jun 55
General Services Administration, Business Service Center, Region 2, 250 Hudson St., New York 13, N. Y.			
Rental of water cooler.	Indef.	(NY-2M-62655)	8 Jun 55

## U. S. DEPARTMENT OF INTERIOR

Bureau of Indian Affairs, Branch of Buildings and Utilities, Albuquerque, New Mexico			
Refrigeration Navajo Reservation.	Job	(BU803-351-3)	8 Jun 55

## Freezer Sales by States By Distributors

SALES OF FARM AND HOME FREEZERS—COMPLETE BY DISTRIBUTORS TO DEALERS—BY STATES

Summary for First Three Months, 1955

STATES	UNITS
Alabama .....	2,241
Arizona .....	277
Arkansas .....	1,625
California .....	3,252
Colorado .....	1,217
Connecticut .....	1,006
Delaware .....	257
District of Columbia .....	1,133
Florida .....	2,653
Georgia .....	3,308
Idaho .....	423
Illinois .....	5,485
Indiana .....	3,821
Iowa .....	3,677
Kansas .....	1,704
Kentucky .....	2,080
Louisiana .....	2,758
Maine .....	288
Maryland .....	1,543
Massachusetts .....	638
Michigan .....	3,626
Minnesota .....	2,652
Mississippi .....	1,555
Missouri .....	4,080
Montana .....	519
Nebraska .....	2,659
Nevada .....	117
New Hampshire .....	109
New Jersey .....	1,831
New Mexico .....	448
New York .....	4,593
North Carolina .....	2,842
North Dakota .....	1,153
Ohio .....	6,529
Oklahoma .....	1,170
Oregon .....	1,381
Pennsylvania .....	8,201
Rhode Island .....	111
South Carolina .....	1,338
South Dakota .....	1,837
Tennessee .....	2,802
Texas .....	6,267
Utah .....	470
Vermont .....	94
Virginia .....	1,901
Washington .....	1,507
West Virginia .....	1,375
Wisconsin .....	2,511
Wyoming .....	193
Total United States .....	103,237

Participating companies: Admiral Corp.; Appliance & Electronics Div., Avco Mfg. Corp. (Bendix & Crosley Divs.); Deepfreeze Appliance Div., Motor Products Corp.; Frigidaire Div., General Motors Corp.; General Electric Co.; Gibson Refrigerator Co.; Hotpoint Co., Div. of General Electric Co.; International Harvester Co.; Kelvinator Div., American Motors Corp.; Maytag Co., The; Norge Div., Borg-Warner Corp.; Philco Corp., Appliance Div.; Quicfrez, Inc.; Revco, Inc.; Seeger Refrigerator Co.; Servel, Inc.; Sub-Zero Freezer Co., Inc.; Victor Products Corp.; Westinghouse Electric Corp.; Wilson Refrigeration, Inc.

## Paine Electric Will Handle 'Weathertron'

LANCASTER, Ohio — Paine Electric Co. here has announced its appointment as an authorized dealer for the General Electric "Weathertron."

Paine will sell, install, and service the G-E heat pump. The dealer displayed the pump in its booth at the recent Lancaster Home Show.

## CLASSIFIED ADVERTISING

RATES for "Positions Wanted" \$7.50 per insertion. Limit 50 words. 15¢ per word over 50.

RATES for all other classifications \$10.00 per insertion. Limit 50 words. 20¢ per word over 50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words. Other address by actual word count. Please send payment with order.

## POSITIONS WANTED

EXECUTIVE ENGINEER—44—experienced manager in environment test equipment, refrigerators and freezers, both commercial and domestic; detailed in all phases of manufacturing and engineering in metal industry and machine tool operations. BOX A5254, Air Conditioning & Refrigeration News.

REFRIGERATION SERVICE engineer desires permanent position with a reliable concern. Capable of designing and engineering refrigeration and air conditioning installations. 20 years' experience, including 14 years teaching technical aspects of refrigeration and air conditioning. Can furnish reliable references and letters of recommendation. BOX A5256, Air Conditioning & Refrigeration News.

## POSITIONS AVAILABLE

COMMERCIAL REFRIGERATION engineer—for position as assistant chief engineer with experience in design and development of commercial refrigerators—also thorough background in refrigeration applications. Write THE WARREN CO., INC., Box 1463, Atlanta 1, Georgia.

SALES MANAGER: Experienced in handling national promotion of agricultural or dairy equipment, or refrigeration equipment. Unusual opportunity for man with enthusiasm, intelligence and recognized sales managerial ability in a rapidly expanding business. Write BOX A5250, Air Conditioning & Refrigeration News.

WANTED: ASSISTANT air conditioning design engineer for permanent position with large active Los Angeles Carrier distributor and contractor. Write stating age, experience, education, salary requirements and enclose recent photograph. Replies held strictly confidential. BOX A5253, Air Conditioning & Refrigeration News.

ASSISTANT SERVICE manager—Rapidly growing high-side manufacturer is interested in employing qualified man to serve as assistant service manager. Must have had minimum five years' commercial field experience. Some office experience would be helpful. If you are interested in a position with a future, contact us. BOX A5257, Air Conditioning & Refrigeration News.

MANUFACTURERS' AGENTS wanted by national manufacturer of complete line of freezers, room air conditioners, milk coolers, and allied equipment. Will pay higher than normal commissions. In New England States, Metropolitan New York, New York State, New Jersey, Pennsylvania, Vermont, Florida and adjacent states, North and South Dakota, Montana, Wyoming, Nebraska, Kansas, Arizona, New Mexico, Nevada. Reply to BOX A5258, Air Conditioning & Refrigeration News.

and ventilating preferred B.S.E.E. or B.S.M.E. Good opportunity with south central Michigan manufacturer. Send complete resume, stating salary expected. Reply BOX A5259, Air Conditioning & Refrigeration News.

POSITION OPEN for man to head up Airtemp Department for A-1 distributor in Cairo, Egypt. Technical and practical experience required. Excellent opportunity for right man. Salary commensurate with ability and experience. BOX A5260, Air Conditioning & Refrigeration News.

## EQUIPMENT FOR SALE

THREE 20-TON Frigidaire condensing units, complete with motor, coils and starter. Good condition. Must sell immediately. W. T. HEANEY, 8425 Joy Road, Detroit, Mich., TEXAS 4-7760.

AUTOMOTIVE AIR conditioning, complete kits, low sides, compressors, condensers, controls. Closing out complete stock below cost. Send for descriptive list and price. KOOLRIDE, INC., 3745 Haverhill Dr., Toledo 12, Ohio.

CLOSE-OUT: All brand new and in original cartons, 6-watt CW condenser fan motors @ \$4.75; 1/2 OD packless line shut-off valves @ \$2.40; 1/2 OD ditto @ \$6.40; 1/2 SAE x 18 cubic brass refillable driers @ \$2.30; 1/2 SAE x 36 cubic ditto @ \$3.20. INDUSTRIAL SALVAGE CO., P. O. Box 112, Elizabeth, N. J.

BRAND NEW motor compressors—Model P91 @ \$29.50, S88 @ \$29.50, S84 @ \$31, S54 @ \$32, S44 @ \$33, S34 @ \$35. All complete with relays. Write for additional information on these and complete refrigeration units. MANN REFRIGERATION SUPPLY CO., 440 Lafayette Street, New York 3, N. Y.

ATTENTION DEALERS: Residential air conditioners, completely packaged, available at economy prices. 2 h.p. and 3 h.p. sealed system units shipped ready for installation. No field refrigeration required. 5-year warranty. SPRING CORPORATION, Kensington, Maryland.

REFRIGERATION VALUES: Attention servicemen; send for our catalog of refrigeration parts; savings up to 50%. WALTER W. STARR REFRIGERATION SUPPLIES, 2833 Lincoln Ave., Chicago 13, Illinois.

GREYHOUND TYPE display and sales bus—completely air conditioned—equipped with 5 h.p. gasoline generator for lights and power for demonstrating electrically-powered equipment. Splendid mechanical condition, ready for the road. Write, wire or phone for complete information—wonderful sales aid for manufacturer or distributor. WRIGHT AIR CONDITIONING CORPORATION, 383 1/2 Whitehall Street, S.W., Atlanta, Georgia.

## MISCELLANEOUS

"SEALED UNIT Rebuilding-Basic Tools & Methods"—an instructive copyrighted manual giving complete details on economically equipping your shop to handle hermetic rebuilding. Exclusive trade secrets unavailable elsewhere. Mail postcard for descriptive folder. H. W. CUSTER, P. O. Box 98, Center Line, Michigan.

DOMESTIC CONTROLS and relays repaired equal to new at a small cost. New controls and relays also in stock. Write in for information. UNITED CONTROLS, 342 West 70th St., New York 22, N. Y.



## NLRB Ruling Favors Contractors--

(Concluded from Page 1, Col. 5) union regards as being plumber's work."

The case developed out of work stoppages during August, 1954 that delayed the completion of a new A & P supermarket at Bridgeville, Pa. and a new Thorofare market at Avalon, Pa.

In the latter instance, Thorofare claimed that it had suffered extensive losses caused by spoilage and deterioration of perishable and semi-perishable food stocked in the store.

Neither A & P nor Thorofare employ members of the United Association. They employ members of the carpenters' union in their maintenance crews. In these instances, they assigned to the carpenters the job of leveling, aligning, and setting of the refrigeration display cases.

### DISPUTE IS MANY YEARS OLD

Jurisdiction over this work has been a matter of inter-union dispute between the carpenters and the United Association for many years, the NLRB noted.

The work of connecting the cases, however, was subcontracted to refrigeration contractors, as clearly being within the jurisdiction of the UA.

J. B. Ruthrauff, Jr. of Refrigeration Equipment Co. told the NLRB that even before he bid for the A & P job, Harold Greiff, assistant business agent for the UA local, tried to force him to insist that A & P assign the work of leveling, aligning, and setting of refrigeration cases to him as part of the subcontract.

He told Greiff that he could only bid on the work that A & P asked him to bid on.

### UA MEMBER CALLED OFF JOB

Ruthrauff won the bid for connecting up the equipment only. At the appointed time, he sent a man to the site to begin the work. He testified that when Greiff heard that the carpenters had set the cases, he called Ruthrauff's man, who was a member of the UA local, off the job.

At about the same time, Weston Sales & Service, which had the contract to connect up the equipment for the Thorofare supermarket, was faced with the same difficulties.

Weston testified that he went to see Greiff about what could be done to complete the job. Greiff told him he should get a Thorofare official to "put the pressure on the carpenters" to make the latter union release its claim to work involving the setting, leveling, and aligning of refrigerated display cases.

Greiff also told Weston that he would keep the men off the job until an understanding could be obtained from Thorofare on future work assignments. He added that Weston should refuse to accept job contracts in the future unless the contract provided for the entire job, including setting, leveling, and aligning of the cases.

### ARTICLE OF CONTRACT CITED

In reply to these charges, the union offered a copy of its work contract with the refrigeration contractors association in effect at that time.

The first article of this contract declares that the union "insists" that contractors "procure and embrace in their job contracts and specifications all of the unloading, handling from curbstone delivery, erection, and installation of piping, fixtures, appurtenances and appliances that are necessary to make a complete refrigeration and/or air conditioning installation, all of which are embraced in the United Association's jurisdiction of work, including all service work."

Attorney for the UA contended that acceptance by the contractors of the kind of subcontracts offered by the grocery companies was actually a breach of the contractors

contractual commitment to the UA.

Referring to the contract article quoted above, the NLRB declared in its decision that "although all that this article states is that the UA 'insists' upon the refrigeration contractors' procurement of complete job service contracts, we may assume without so deciding, that this provision in fact obligates the employer parties to the agreement to refuse the more limited kind of job contracts which the grocery companies here awarded to Weston and Ruthrauff."

"We further find that the terms of this contract could not provide the UA with a valid defense to conduct forcibly requiring the refrigeration contractors to procure, for assignment to their employees, the disputed work from the grocery companies."

"This is so, because, apart from any other reasons which may be pertinent, we find that Article I (c) (quoted above) of the contract is an integral part of a discriminatory scheme for the effectuation of a UA monopoly over the work that union regards as being 'plumbers' work.'"

### DISCRIMINATORY RESTRICTION CALLED ILLEGAL

NLRB noted that other articles in the contract "restrict the refrigeration contractors to the employment of plumber's (UA) members only, for at least part of the work tasks over which the UA claims jurisdiction. Such discriminatory restriction, however, is *per se* illegal within the meaning of Section 8(a) (3) of the National Labor Relations Act."

"Its existence in the contract, under the circumstances, thus brings this case within the scope of the Board's rulings in the Philadelphia locals of the UA."

"The Board held, in that case, that a collective bargaining contract providing for the employment of union members only in the performance of work tasks encompassed in the union's jurisdictional claim was invalid and unenforceable; and that, therefore, such a contract could neither 'insulate' a union's strike-supported demands upon the contracting employers for the assignment of the work tasks in dispute from the reach of Section 8(b) (4) (D) of the Act, nor serve as a basis for the Board's determination of the merit of the Union's claims."

"We conclude, accordingly, that the plumbers (UA) were not lawfully entitled to enforce or require, by means proscribed by Section 8(b) (4) (D) the grocery companies or the employer members of the Refrigeration Contractors Association (including Weston and Ruthrauff), and are not lawfully entitled to similarly require any other employer or association of employers in Allegheny county, Pa., to assign the work of setting, leveling, and aligning of refrigerated display cases on supermarket or on other store construction projects to members of the plumbers rather than members of the carpenters, or members of the carpenters' craft."

### Kelvinator Cuts Price of Colored Kitchen Cabinets And Adds Bermuda Pink

DETROIT—Kelvinator has reduced the price of its kitchen cabinets in color and has added Bermuda pink to its factory-applied color cabinets, Homer L. Travis, general sales manager, announced recently.

Now, any of Kelvinator's kitchen cabinets may be ordered in color at the same price as standard white, Travis said. The cabinets are available in three colors from the factory. Paints in five additional colors may be ordered for local application.

## Death Trap Owner Found Innocent of Misdemeanor Charges

LOS ANGELES—In the first case to be tried in California under the state's "death trap" law, the owner of a refrigerator in which two young boys suffocated last April was found innocent of misdemeanor charges.

Enacted in 1951, the law makes it a misdemeanor to discard or abandon a refrigerator in a place accessible to children without first removing latches or doors.

Municipal Judge Harry R. Simon in Huntington Park held that John Richardson's refrigerator in a storage shed which was also used as a chicken coop was not in a place accessible to children.

Said the judge: "In the absence of precedent, it is our purpose to try and fathom the intent of the legislature in establishing this statute. It seems to me that the abandoned refrigerator must be in plain sight to attract the attention of children in order to violate the statute."

"In the defendant's case, the refrigerator was in a shed, surrounded by four walls, with a barricade or some sort of obstruction in front of the open door of the building."

"The children had to trespass on Mr. Richardson's property and enter his shed. . . ."

Objecting to the judge's ruling,

Deputy District Attorney Maxwell Keith said he felt the shed was an object of attraction and the refrigerator was accessible to them.

Richardson's victory was not all it might have been. After the trial, he was returned to jail. He was serving a 10-day sentence for traffic violations.

## Moody Will Speak at Mechanical Engineers Meeting in Boston

LA CROSSE, Wis.—Arthur M. G. Moody, a senior development engineer at The Trane Co., is among the speakers at the diamond jubilee semiannual meeting of the American Society of Mechanical Engineers. The June 19-24 session will be held at Hotel Statler, Boston, and has adopted as its anniversary theme: "The Engineer and the world of science."

Moody's discussion of "Part Load Performance in Centrifugal Refrigeration" will be part of the process industries session scheduled for Monday, June 20. Forty-one such technical sessions, along with a number of inspection trips will attract more than 1,200 engineers and their guests, including several hundred from abroad.

Among the latter groups will be delegates to the Joint Conference on Combustion, being conducted a week earlier in Boston by ASME and Great Britain's Institution of Mechanical Engineers.

## Purchasing Agents See Better Business During Last Half Than In '54

NEW YORK CITY—Many buyers surveyed recently by the National Association of Purchasing Agents agreed that business in the second half of 1955 would be substantially better than in the like 1954 period.

Only 4% of those taking part in the survey predicted a decline for this period from the year-ago level.

Fifty-four per cent said there was a gain in new orders during May.

However, competition continued to be keen, they emphasized.

Thirty-three per cent looked for the second half of this year to be better than the first half, while 42% saw no change. The 25% who forecast a downturn did not foresee a major decline but rather a "breathing spell" due for the most part to vacations and model changes in the automotive industry.

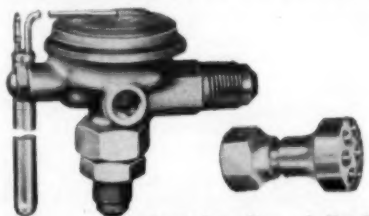
Prices continued to rise gradually in May as they have in the past several months, according to 54% of the buyers. This was attributed to higher manufacturing and distributing costs rather than to any rise in basic raw materials. Copper, zinc, and special cutting tools were most often mentioned as higher in price.

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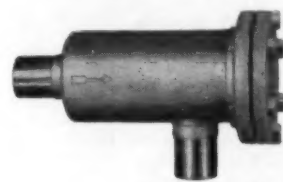
### SOLENOID VALVES



A broad line of valves with capacities to 50 tons F-12 and 60 tons F-22.

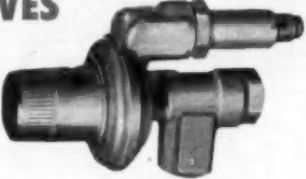
Special purpose miniature solenoid valves for any application.

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### AUTOMATIC CONTROLS



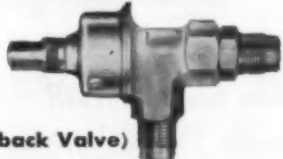
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